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# OUR COMMON TRAGEDY?

## ESSAYS ON POLITICAL PHILOSOPHY IN THE AGE OF GLOBAL ECOLOGICAL CRISIS AND LOCAL CONFLICTS

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ACADEMIC DISSERTATION

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# ABSTRACT

The most severe current ecological threats seem to evade the conventional theories of political philosophy. An important reason for this is related to the *global* and *intergenerational* nature of many acute ecological threats. Because of the global interrelations of the ecological system itself as well as of the increasingly global interconnection of human activities, the causes and effects of many ecological problems are typically *vastly dispersed* over the globe. Moreover, some of the most serious ecological problems are *severely deferred*. For instance, the most severe impacts of climate change, such as sea level rise, take a very long time to be fully realised. Thus many of our current activities impact seriously not only the people of the current and succeeding generations but also future people living on this planet hundreds of years from now.

All this means that the problems in the use of the common environment go well beyond the boundaries of the existing political communities and authorities. The vast dispersion of causes and effects also leads to *fragmentation of agency*, that is, the problem is not caused by any single agent, but by a vast number of individuals and institutions that are not unified by any comprehensive structure of agency that could underpin and guide our normative assessment of the situation. As a result, many of the common-sense moral and political concepts – such as responsibility, fairness, and democracy – so central to our existing social steering mechanisms and political institutions seem to lose their normative grip.

Another reason for the inadequacy of conventional solutions of political philosophy relates to the *complexity* of the ecological problems. Ecological systems involve interaction by a large number of elements and the relationships between these elements are often non-linear, including unpredictable rebound effects and large spatial and temporal variations. All this increases the *uncertainty* concerning the present or future ecological conditions and the consequences of human actions. This makes environmental issues especially vulnerable to various disagreeing interpretations about the relevant ecological facts and knowledge as well as about the normative criteria that should be applied in the situation.

This thesis explores critically some of the theoretical suggestions offered in the literature of environmental political philosophy to overcome above-mentioned challenges and suggests some promising ways forward. Against those who have proposed a move to collective principles because of the collective nature of the ecological problems, the thesis defends an individualistic approach. The global and intergenerational expanse notwithstanding, the thesis supports some conventional strategies of liberal political philosophy to solve large-scale collective action problems by establishing a justified political authority. According to the thesis, complexity, uncertainty and vulnerability to disagreements speak in favour of democratic

justification of the authority: no other way of resolving the disagreements in the uncertain and complex world can be claimed to be epistemically and morally superior to democracy. Moreover, because appropriately democratic processes are able to show *publicly* that the (possibly) disputing interests of people are treated in equal and fair manner, the democratic outcomes are able to gain more legitimacy than those resorting solely to the environmentally grounded epistemic (eco)-authority. Public justification and legitimacy of the outcomes may, in turn, help the implementation of environmental policies. This is particularly true when these policies concern interests that are the most salient for the people, as is the case with many environmental decisions requiring drastic changes in private consumption patterns, life-styles, and conventional habits.

While democratic processes remain an essential way to produce legitimately authoritative environmental outcomes, the global and intergenerational scope of the problems requires a justification that transcends the democratic processes themselves. Here the thesis defends a Rawlsian kind of contractualism as a way to justify the authority of some global and intergenerational principles and argues that even in the existing non-ideal circumstances the Rawlsian *principle of fairness* gives us some guidance about the legitimacy of our societal institutions, laws, and policies, and about the limits within which they deserve our compliance. Appealing to the principle of fairness it is also possible to ground some novel citizenship duties, even at the global and intergenerational level. If the existing institutions and policies represent a clear departure from the fair global and intergenerational terms of social cooperation, the principle of fairness provides a justified ground to even quite radical acts of civil disobedience.

In addition, the thesis defends the common sense *no-harm principle* that holds irrespective of the institutional arrangements between people. Due to vast dispersion of causes and effects, a growing number of environmental ethicists have doubted its applicability in the context of large-scale environmental problems at all. Some others have proposed its application at the collective level. Contrary to these authors, the thesis provides a defence of the individualistic no-harm principle as a common-sense way to justify individuals' duties to change their environmentally harmful behaviour and to promote more effective collective and institutional ways to prevent environmental harm.

Finally, the thesis defends a *sufficientarian* understanding of social justice as the most plausible and coherent way to connect local, global and intergenerational demands. It is also suggested that the sufficientarian approach is capable of overcoming some theoretical challenges that rise at the intergenerational context, in which our choices have an influence not only on how well- or badly-off people in the future are, but also on who those future people are.

# ACKNOWLEDGEMENTS

The finishing process of this thesis has been very long – timewise it may even be a record in the history of the unit of social and moral philosophy. During this long process I have had the privilege to work with so many excellent people that it seems to me impossible to thank everyone deserving my gratitude. However, I am grateful to them all and apologise for those I should have mentioned but forgot to do so.

Firstly, I am grateful to my supervisor Docent Olli Loukola. Without his encouragement and support, this long journey might not have ever started even, or might have ended up with wholly different topics. It was Olli who persuaded me from theoretical philosophy to practical philosophy, and through him I got funding for many interdisciplinary projects that applied political philosophy to environmental matters.

Marjukka Laakso is another person who deserves my special thanks for those early years. There we were, two post-graduate philosophy students trying to do interdisciplinary environmental research. As the topic of the very first project was sustainable forestry, we were soon called as the "PÖLKKY-project" ('Pölkky' literally means a block of wood, but can also be used for a person who is a fool, a "blockhead"). Without Marjukka's great, warm sense of humour and our mutual collegial support, I doubt whether we would have survived in those ever-changing interdisciplinary projects, without actually becoming bit of "blockheads" ourselves. Marjukka's support became crucial again in the final steps of the process, now from the administrative point of view. Thanks Marjukka!

During the years many people have encouraged and given intelligent advice to me in different areas of my research. In the field of environmental philosophy and ethics, my main mentor has been Docent Markku Oksanen. At every step in this long journey, whenever there was a new article or a new research idea, Markku has been there with his wise suggestions and comments. I owe him enormous gratitude for all his collegial help and support. Markku was also the preliminary examiner of the thesis, and his valuable comments improved the thesis in many ways.

In political philosophy and in ethics, I have been lucky to be surrounded by so many great colleagues. Discussions, like those I enjoyed in the reading group on social justice together with Pilvi Toppinen, Professor Arto Laitinen, and Jukka Mäkinen, have influenced my thinking of political philosophy in many significant ways. Pilvi and Docent Kristian Klockars were also important discussion partners concerning democratic theory, and much in my thinking about the justification of democracy can be traced to my discussions with these two colleagues. With regard to the questions concerning political authority and tradition of liberal social contract theory, Docent Juhana Lemetti and Ville Paukkonen have given me lots of valuable advice and enlightened me about

the historical richness of these important philosophical questions. In the final part of the finishing process I really appreciated having many inspiring and insightful discussions with Professor Adrian Walsh and Marion Godman. Their support and careful advice helped me a lot to finally get the whole thing together. Thank you Adrian! Thank you Marion!

In ethics, my thinking was influenced much by the discussions in the reading group on normative ethics and metaethics that we had together with Teemu Toppinen, Vilma Venesmaa, Aino Lahdenranta and Säde Hormio. I think I have shared most of my ideas concerning contractualism, consequentialism and intergenerational ethics with these people and their valuable suggestions have helped me forward. With regard to issues of moral responsibility I owe my enourmous gratitude to Pekka Mäkelä. Together with Säde, Pekka has patiently commented almost every piece of the work I have ever written about responsibility. The insightful input of Pekka and Säde has significantly shaped my thinking about individual and collective responsibility. I am also grateful to Bill Wringe, Felix Pinkert, Wouter Peeters, and Alix Dietzel for their helpful comments in joint workshops and conferences.

Pekka, Säde, Teemu and Ville have also been the first test-audience to most of my philosophical ideas and thanks to my discussions with these four clear-minded colleagues, these ideas are now much more clearly and precisely formulated. With Ville I also shared an office space for many years, during which our discussions probably concerned all the important topics in the world. I am quite convinced that that time has greatly affected the graduation process of both of us.

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The various interdisciplinary projects notwithstanding, my home has always been in the social and moral philosophy. I am grateful to Professor Timo Airaksinen and Docent Heta Gylling for their generous support in various stages of this long process. Similarly, I should thank Professor Matti Häyry, Tuija Takala, Johanna Ahola-Launonen, Sirkku Hellsten, Floora Roukonen, Eero Kaila, Niko Noponen and Simo Vehmas, as well as the

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During the recent years I have also enjoyed the hospitality of The Finnish Centre of Excellence in the Philosophy of the Social Sciences. Professor Uskali Mäki has always shown great interest to my research topics and supported me to get funding for them. Especially I am grateful to Alessandra Basso, the co-author of one of the articles in the thesis, and Professor Aki Lehtinen. Extensive discussions with them helped me finally to understand something about the economics. Aki's help has also been crucial in the final steps of my graduation and I am happy to have Aki as my Custos. I am also grateful for the collaboration with other members of the Centre. Particularly I benefitted a lot from the discussions with Professors Jaakko Kuorikoski and Petri Ylikoski, Michiru Nagatsu, Raul Hakli, Jani Raerinne, Tomi Kokkonen, Samuli Pöyhönen, Mikko Salmela, and Caterina Marchionni.

Along the way interdisciplinary projects have followed one another and they have influenced my work in various ways. An important discussion partner, ever since the first so-called PÖLKKY-project, has been Eeva Primmer. Working with her in different research projects, joint articles, and latest in the field of research ethics, has always been such a joyful and inspiring experience. Another important person with whom I have been lucky to work with in many different ways is Professor Janne Hukkinen, whose philosophically open-minded thinking about environmental policy has always inspired me. From the forest economists I should thank Mika Rekola and my brother Sampo Pihlainen for numberless discussions that have helped me to understand forest and resource economics.

After the PÖLKKY-project came researchers working with natural resource policy issues. Article I of this thesis is a result of this collaboration. I am grateful to my co-authors of this article, Alfred Colpaert, Hannu Heikkinen, Mikko Jokinen, Jouko Kumpula, Mika Marttunen, Kari Muje and Kaisa Raitio for the very intensive discussions during the writing process of the article. Without them my future work would most likely have looked very different. Collaboration with Kaisa continued also after the article and influenced greatly my thinking about environmental conflicts. With regard to conflict management, I should also thank Lasse Peltonen for inviting me to many great workshops, in which I have learned a lot.

Then came legal scholars. Though operating with the same concepts, such as 'rights', 'responsibilities' and 'justice', the understanding of these concepts differs a lot in these disciplines. In helping me to understand the legal way, I am especially grateful to Professors Anne Kumpula and Tapio Määttä, and Pasi Kallio. One person outside the academia, who has influenced my thinking in

the area of environmental law, should also be mentioned here: Ilpo Kuronen from the Finnish Association for Nature Conservation.

I should also gratefully acknowledge the financial support I have received through these projects from the Ministry of Agriculture and Forestry, the Academy of Finland, the Maj and Tor Nessling Foundation, the Kone Foundation, and the University of Helsinki Funds.

My philosophical thinking and motivation has always been connected to real concern about the ecological state of the world, and during the years I have made several attempts to improve it more directly outside the academia. Many people with whom I have worked in various NGOs have thus made a lasting impression on my thinking. Especially I want thank Harri Lammi, Kaisa Kosonen, Lauri Myllyvirta, Sini Harkki, Jouni Nissinen, Tuuli Kaskinen and Aleksi Neuvonen for showing me what people can achieve together and what it really means to be devoted to matters that are of utmost importance.

Finally, my deepest heartfelt thanks go to my family. Without the support and love of my parents Elli-Johanna and Aarno in various phases of my life, this doctoral thesis would not have been possible. Same goes to my sister and my brothers. Patiently they have followed this long journey and backed me whenever needed. Thank you Suvi, Sami, Saku and Sampo!

The length of this process becomes painfully clear to me, when I look at my daughters, Kaisla and Kielo. For almost all of their life their dad has used the PhD as an excuse for being always at work. In the recent years even they have gotten tired of asking when the work is finally done, when the day of the defence will be. And to be able give them an answer has certainly been one of my greatest motivators to get here. Thank you, my wonderful girls, for your patience and love.

But getting here would have been nothing without my wife Milma. There is no topic in this thesis that wouldn't be part of the larger world view that we have built together. This view starts from the shared obsession with making the world better and the construction work continues every day in debates about upbringing of children, party politics, foreign aid, climate protection, literature, and philosophy. Shared world view brought us together to Leipzig and then to Nepal and to Iceland, and now much later to Tanzania. Together we have learned how to garden, how to use the circular saw, and how to insulate a summer cabin.

In times of difficulties, as well as in times of succeeding – Milma's love, unconditional support, enthusiasm and honest temper, sense of humour, and genuine partnership have carried me through all these years. To Milma I owe my deepest gratitude for the things that really matter!

Helsinki, August 2017

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# LIST OF ORIGINAL PUBLICATIONS

This thesis is based on the following publications:

I Kyllönen, Colpaert, Heikkinen, Jokinen, Kumpula, Marttunen, Muje & Raitio (2006): "Conflict Management as a Means to the Sustainable Use of Natural Resources". *Silva Fennica* 40 (4), the Finnish Society of Forest Science and the Finnish Forest Research Institute, pp. 687–728.

II Kyllönen, S. (2011): "Public participation and the legitimacy of environmental decision-making: efficacy versus democracy?". In O. Loukola and W.W. Gasparski (eds.) *Environmental Political Philosophy*. Transaction Publishers, New Jersey, pp.113–137

III Kyllönen, S. (2014): Civil Disobedience, Climate Protests and a Rawlsian Argument for 'Atmospheric' Fairness, *Environmental Values* 23: 593–613.

IV Kyllönen, S. and Basso, A. (2017): When Utility Maximization is Not Enough. Intergenerational Sufficientarianism and the Economics of Climate Change. In A. Walsh, S. Hormio and D. Purves (eds.) *The Ethical Underpinnings of Climate Economics,* Routledge, London, pp. 65–86.

V Kyllönen, S. (forthcoming): Climate Change, No-Harm Principle and Moral Responsibility of Individual Emitters, *Journal of Applied Philosophy* (on-line early-view at the moment).

The publications are referred to in the text by their roman numerals.

# INTRODUCTION*

Over the past fifty years, the looming ecological crisis has started to transform the landscape of political theorising. The publication of 'doomsday is nigh' reports in early 1970's – such as The Club of Rome's *The Limits of Growth* [1] – was followed by many eco-authoritarian commentaries suggesting that the rapidly increasing scarcity of environmental resources necessitates profound changes in the current political values and institutions. "The golden age of individualism, liberty, and democracy is all but over", wrote William Ophuls in 1977. Ten years later the influential report *Our Common Future* by the World Commission on Environment and Development resisted this gloomy conclusion by introducing the concept of sustainable development that aimed to balance freedom and democracy with the goals of ecological sustainability.

Sustainable development soon became a buzzword in international and national environmental politics. At the same time, the number of political theorists and philosophers engaged systematically with environmental issues have increased significantly. The past decades have seen a great amount of publications on green democracy, sustainable liberalism, radical green political theory and environmental justice.[2] All the growing attention notwithstanding, the problem has not disappeared; quite the contrary. Environmental degradation and climate change are getting worse and are increasingly undermining the ecological basis of human and non-human life.[3] The specific moral, political and institutional challenges raised by the ecological threats have turned out to be more complicated and profound than in the early optimism of *Our Common Future* could possibly have been imagined. A new kind of pessimism has returned. In many recent publications political philosophers have not been asking, how we could work out solutions,

* I thank Adrian Walsh, Marion Godman, Markku Oksanen, Kai Spiekermann, and Milma Kettunen for their comments on earlier versions of this introductory essay.

[1] Meadows et al. (1972).

[2] E.g. Barry and Wissenburg (2001), Carter (1999), Dobson (1998, 1999), Doherty and de Geus (1996), Eckersley (1992, 2004), Goodin (1992), Hayward (1994, 1998), Minteer and Taylor (2002), Schlosberg (1999, 2007), Shrader-Frechette (2002), Wissenburg (1998), Wissenburg and Levy (2004).

[3] According to Millennium Ecosystem Assessment (2005), approximately 60% of the essential ecosystem services are being degraded or used unsustainably, including fresh water, capture fisheries, air and water purification, and the regulation of regional and local climate, natural hazards, and pests. The latest report of Intergovernmental Panel on Climate Change (IPCC 2014) estimates that the current trends of releasing human-induced greenhouse gases into the atmosphere are likely to seriously accelerate the degradation causing nonlinear changes in the ecosystems, such as abrupt alterations in water quality, collapse of fisheries or of crop productivity.

but rather, why we failed in the fight against the most acute environmental threats.[4]

In this thesis, I aim to resist this "new pessimism" and defend some central parts of our common-sense political and moral principles as a way to build up solutions to the challenges we face. The thesis concentrates on the following main challenges. The first challenge is caused by the large-scale *collective* nature of many serious environmental problems. After the publication of Garrett Hardin's well-cited article "The Tragedy of the Commons" in 1968, it became typical to frame environmental problems as a kind of collective action problem, in which individual actors, each acting rationally, fail to produce an outcome that would be rational to them collectively. For the eco-authoritarians of the 1970's this analysis provided a reason for their call for a powerful government to regulate individual behaviour.

Hardin's article initiated an intense debate in the literature of resource management and his assumptions and conclusions were often judged as oversimplified or even false. Empirical studies on many real-life cases of using the local environment and natural resources showed how users of the resource were often able to prevent the overuse of the resource by suitable social interaction among themselves, and without any external intervention by a regulator or a government.

There are other reasons, however, why the most severe current ecological threats seem to evade these conventional solutions. The most apparent reason is related to the *global* and *intergenerational* nature of many acute ecological threats. Because of the global interrelations of the ecological system itself as well as of the increasingly global interconnection of human activities, the causes and effects of the most serious ecological problems are typically *vastly dispersed* over the globe. Moreover, some of the most serious ecological problems are *severely deferred*. For instance, the most serious impacts of climate change, such as sea level rise, take a very long time to be fully realised. Thus many of our current activities impact seriously not only the people of the current and succeeding generations but also future people living on this planet hundreds of years from now.

All this means that the collective action problems in the use of the common environment go beyond the boundaries of the existing political communities and authorities. The vast dispersion of causes and effects also leads to *fragmentation of agency*, that is, the problem is not caused by any single agent, but by a vast number of individuals and institutions that are not unified by any comprehensive structure of agency that could underpin and guide our normative assessment of the situation. As a result, many of the common-sense moral and political concepts – such as responsibility, fairness, and democracy – so central to our existing social steering mechanisms and political institutions seem to lose their normative grip. In addition to the "Tragedy of

[4] See e.g. Foster (2014), Gardiner (2011), Hamilton (2010), Jamieson (2014).

the Commons", many philosophers have started to talk about the "*ethical tragedy*" of the ecological crisis.[5]

Another reason for the inadequacy of conventional solutions relates to the *complexity* of the ecological problems. Ecological systems involve interaction by a large number of elements and the relationships between these elements are often non-linear, including unpredictable rebound effects and large spatial and temporal variations. All this increases the *uncertainty* concerning the present or future ecological conditions and the consequences of human actions. This makes environmental issues especially vulnerable to various disagreeing interpretations about the relevant ecological facts and knowledge as well as about the normative criteria that should be applied in the situation. As an early critic of the "Tragedy of the Commons" noted, the tragedy in the use of the environment is profoundly also a "*political tragedy*".[6] Vulnerability to disagreements is likely to undermine the prospects of any eco-authoritarian solution that resorts straightforwardly to some purported environmentally beneficial outcome of the solution. The difficulties related to such a utilitarian type of justification become even more pronounced once the global and intergenerational dispersion of the effects is taken into account.[7]

This thesis explores critically some of the theoretical suggestions offered in the literature of environmental political philosophy to overcome these challenges and suggests some promising ways forward. Against those who have proposed a move to collective principles because of the collective nature of the problems, the thesis defends an individualistic approach. The global and intergenerational expanse notwithstanding, the thesis supports some conventional strategies of liberal political philosophy to solve large-scale collective action problems by establishing a justified political authority. In contrast to the eco-authoritarians, I agree with the general line of the contemporary environmental political philosophy: the complexity, uncertainty and vulnerability to disagreements speak in favour of democratic justification of the authority. According to the argument, defended here, no other way of resolving the disagreements in the uncertain and complex world can be claimed to be epistemically and morally superior to democracy.

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[5] Stephen Gardiner has titled his recent book as *A Perfect Moral Storm. The Ethical Tragedy of Climate Change* (Gardiner 2011). Another leading environmental ethicist Dale Jamieson writes that our, dominant "moral machinery" has evolved in "low-population-density and low-technology societies, with seemingly unlimited access to land and other resources", and it is thus "inadequate and inappropriate" in the age of global environmental crisis (Jamieson 2010a, p. 83).

[6] See Crowe (1969).

[7] Some authors claim that the global and intergenerational nature of the problems speak in favour of an utilitarian (or consequentialist) theory, because it ranks the alternative outcomes from impersonal and agent-neutral standpoint, in which such things as national or intra-generational relations have no direct moral relevance (see Goodin 1992, Parfit 1984, Singer 1993). The difficulties related to utilitarian strategy are also widely discussed in the literature (Article IV, Broome 2012, Jamieson 2010b, Gardiner 2011, Mulgan 2006, Parfit 1984, Scheffler 2001).

Moreover, because appropriately democratic processes are able to show *publicly* that the (possibly) disputing interests of people are treated in equal and fair manner, the democratic outcomes are able to gain more legitimacy than those resorting solely to the environmentally grounded epistemic (eco)-authority. Public justification and legitimacy of the outcomes may, in turn, help the implementation of environmental policies. This is particularly true when these policies concern interests that are the most salient for the people, as is the case with many environmental decisions requiring drastic changes in private consumption patterns, life-styles, and conventional habits.

While democratic processes remain an essential way to produce legitimately authoritative environmental outcomes, the global and intergenerational scope of the problems requires a justification that transcends the democratic processes themselves. Here the thesis defends a Rawlsian kind of contractualism as a way to justify the authority of some global and intergenerational principles and argues that even in the existing non-ideal circumstances the Rawlsian *principle of fairness* gives us some guidance about the legitimacy of our societal institutions, laws, and policies, and about the limits within which they deserve our compliance. Appealing to the principle of fairness it is also possible to ground some novel citizenship duties, even at the global and intergenerational level. If the existing institutions and policies represent a clear departure from the fair global and intergenerational terms of social cooperation, the principle of fairness provides a justified ground to even quite radical acts of civil disobedience.

In addition, the thesis defends the common sense *no-harm principle* that holds irrespective of the institutional arrangements between people. Due to vast dispersion of causes and effects, a growing number of environmental ethicists have doubted its applicability in the context of large-scale environmental problems at all. Some others have proposed its application at the collective level. Contrary to these authors, the thesis provides a defence of the individualistic no-harm principle as a common-sense way to justify individuals' duties to change their environmentally harmful behaviour and to promote more effective collective and institutional ways to prevent environmental harm.

Finally, the thesis defends a *sufficientarian* understanding of social justice as the most plausible and coherent way to connect local, global and intergenerational demands. It is also suggested that the sufficientarian approach is capable of overcoming some theoretical challenges that rise at the intergenerational context, in which our choices have an influence not only on how well- or badly-off the people in the future are, but also on who those future people are.

In this introductory essay, I will give a brief overview about the themes motivating the thesis and its main argumentative strategy. In Part 1 of this introduction I start by giving an analysis of the collective nature of the current environmental problems by exploring the debate that was initiated by the publication of Garrett Hardin's "The Tragedy of the Commons". In Part 2 of

the introduction I discuss the normative and political implications of this collective-action-problem analysis of the current environmental problems. Part 2 also introduces the ethical principles of fairness and sufficientarianism, the no-harm principle, and the understanding of appropriate democracy defended in the thesis. Part 3 lists the individual Articles of the thesis.

But before proceeding any further, few remarks to situate the thesis in the landscape of environmental (political) philosophy more generally. First, there is the question concerning the moral standing of the non-human nature, which has been one of the most fundamental questions in environmental ethics. For many environmental ethicists, the most important cause of environmental crisis is the anthropocentric approach of the mainstream ethical theories and worldviews.[8] According to this claim, the problem is that these anthropocentric theories restrict the moral consideration only to human beings. In other words, in anthropocentric theories only human beings (or state of affairs related to the good of human beings) have moral standing and non-human nature has only instrumental value in promoting the good of human beings. In contrast to this, the so-called eco- or biocentric environmental ethics aim to show that also non-human beings (or state of affairs related to the good of non-human beings) are appropriate objects of direct moral consideration, that is, the non-human natural beings have a moral standing of their own.[9] Moreover, the claim of many eco- or biocentric environmental ethicists is that only by adopting a non-anthropocentric ethical attitude we may be able to solve the ecological crisis.

With regard to this question between anthropocentrism and biocentrism, the thesis may appear as belonging to the anthropocentric camp, as it defends some mainstream moral concepts and principles and discusses them mostly at the level of human relations. The thesis also applies Rawlsian contractualism, which traditionally has concerned relations between human members of the society.[10] However, this should *not* be read as a statement that the concepts or

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[8] A classic presentation of this view is Lynn White Jr's seminal article 'The Historical Roots of Ecological Crisis" in *Science* (1967). See also Routley (1976).

[9] The division between eco- and biocentric views is often made as follows. Ecocentrism is a holistic view, since it allows moral standing to collective entities, such as species and ecosystems, whereas biocentrism refers to those ethical theories that extend moral standing solely to individual non-human beings. The main advocators of the holistic ecocentric view are Arne Naess (1973) and Baird J. Callicott (1989), who is building his theory strongly on Aldo Leopold's land ethic (Leopold 1949) (but for another, more "anthropocentric" and pragmatist interpretation of Leopold's approach see Norton 2005). Leading environmental ethicists representing the latter biocentric view are Robin Attfield (1981, 1994), Kenneth E. Goodpaster (1978), James Sterba (1995, 2006), Paul Taylor (1986) and Gary Varner (2002). It should be clear that in its tendency to go beyond anthropocentrism, the defence of individualistic approach of the thesis is rather biocentric than ecocentric.

[10] With regard to "the problem of what is owed to animals and the rest of the nature", Rawls writes that there are several alternatives: "One is that the idea of political justice does not cover everything, nor should we expect it to. Or the problem may indeed be one of political justice but justice as fairness is not

principles defended here could not, or even should not, be extended to non-human nature. In fact, I sincerely believe, that an appropriate response to the ecological crisis requires that more moral consideration is given to the non-human fundamental interests. And nothing in this thesis precludes the inclusion of the non-human interests in the consideration when applying, for instance, the no-harm principle and even intergenerational sufficientarianism.[11] But a thorough discussion of a "biocentric" application of the defended concepts and principles is out of scope of this thesis.

Moreover, I also believe that even when applied at the level of human relations, the principle of fairness, of intergenerational sufficientarianism, and the no-harm principle, if taken seriously, go a good way to the direction of protecting the non-human fundamental interests indirectly. So, for instance, if we really aim to protect certain fundamental interests of the people far in the future, such as their real opportunities to choose meaningful life plans, we should not only focus on protecting narrowly the natural resources that are

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correct in this case, however well it may do for other cases. How deep a fault this is must wait until the case itself can be examined. Perhaps we simply lack the ingenuity to see how the extension may proceed. In any case, we should not expect justice as fairness, or any account of justice to cover all cases of right and wrong. Political justice needs always to be complemented by other virtues." (Rawls 1993, 21). Some environmental ethicists have proposed an extension by "thickening the veil of ignorance", that is, the people in the original position would also be uncertain about whether or not they turn out to humans, or members of some other non-human species (Norton 1989, Singer 1988, VanDeVeer 1979, Wenz 1988). However, there are several reasons to be sceptical about this solution (see e.g. Wissenburg 1993, p. 17). First, I agree with Rawls that justice as fairness is a concept of *political (or social) justice*. In other words, the whole idea of Rawls's original position is to select principles for those who can enter to mutually advantageous *social cooperation*. Therefore, in order to derive principles for another kind of relationship between humans and non-humans (that is not social cooperation), it is not enough just to "thicken the veil" by adding a new area of ignorance about the species one would turn out to belong. Rather, this new, much more extended purpose would change the whole design of the original position; e.g. the idea of mutual advantage and reciprocity, the idea of primary goods as a publicly recognisable index for social justice. At the moment, we certainly "lack the ingenuity" to see how such an extended design would proceed and what principles of political/social justice it would then specify. Second, even if an extended version the contractualist theory (a kind of "A Theory of Ecological Justice") would be possible, it may well turn out that it would be impossible to operationalize as a publicly recognisable concept of justice. Norton (1989) sees this as reason why rational choosers in the original position would rather choose a principle that would protect the non-human nature by protecting the human interests of the future people. My thinking about extending Rawls's justice as fairness to the issues concerning the non-human nature follows mainly this kind of indirect strategy, but I argue also that the no-harm principle (and the sufficientarian idea of a threshold related to it), that complements the principle of fairness, opens an important way to pay direct moral consideration to non-humans. On Rawls's theory and environmental issues, see also Dobson (1998), Hayward (1998), and Schlosberg (2007).

[11] For a discussion of the issues related to the application of these principles to non-human nature, see Cripps (2013), Dobson (1998), Palmer (2011), Sterba (1995, 2006), Schlosberg (2007), and Wissenburg (1993, 1998).

currently taken to be crucial for the human fundamental interests. Rather, it seems likely that providing future people with sufficient meaningful opportunities necessitates us to protect also non-human nature, like ecosystems rich in biodiversity, even if that part of nature may currently not seem to be directly related to the fulfilment of human fundamental interests.[12]

Second, a few words may be in place about the selected literature of the thesis and its links to wider environmental political literature. The thesis defends the mainstream liberal theorising of political philosophy in the face of ecological challenge[13], and thus it refers only occasionally to other important work of environmental political philosophy made outside political liberalism. These significant contributions explore, from the environmental viewpoint, some other major political theories and ideologies, such as socialism, feminism, libertarianism, conservatism, nationalism, and republicanism.[14] Even if these other major ways of political theorising are not directly discussed in the thesis, some of their main themes are. When defending the political authority and its liberal justification as a central way of responding to the ecological challenge, the thesis argues against libertarianism and anarchism. Similarly, some main themes of Marxist/socialist tradition are discussed when the eco-anarchic views are considered.[15] While the defence of the moral principles as global precludes naturally the most nationalistic views about the moral and political principles, the defence of democracy as an important way to produce legitimate and authoritative environmental policy outcomes takes some of the themes of liberal nationalism into account. Some central ideas of civic republicanism are introduced by the discussion of duties and responsibilities of environmental citizens.[16] Moreover, when the thesis defends certain common-sense moral principles as well as the

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[12] Bryan Norton calls this idea of using the protection of the interests of the future people as "anthropocentric means to ecocentric ends" as "the convergence hypothesis": "if the full range of human interests deriving from a diverse biota are protected over indefinite time, legitimate nonhuman interests will be protected as well. The convergence hypothesis is a corollary of holism – human values deriving from biological diversity will only be protected over the longest run if the biosphere as a whole is managed to maintain natural functioning and protect biological diversity." (Norton 1989, p. 154). Interestingly, Norton justifies the choice of this hypothesis by stipulating Rawls's original position. For the idea of understanding intergenerational justice through equal opportunities, see Barry, B. (1999), Dobson (2003), and Hormio (2017).

[13] There is an abundant literature about the relationship between liberalism and liberal democracy, on the one hand, and the ecological challenge, on the other. See e.g. Barry and Wissenburg (2001), Doherty and de Geus (1996), Minteer and Taylor (2002), Wissenburg (1998), Wissenburg and Levy (2004).

[14] For a good introduction to these other theories from the environmental viewpoint, see Barry (2007), Dobson and Eckersley (2006), Dobson (1995).

[15] For more discussion on Marxism, socialism and environmental issues, see Barry (1999b), Bellamy Foster (2000) Benton (1996, 2000).

[16] For more discussion, see Dobson and Bell (2006).

intergenerational sustenance of social practices and political authority based on those principles, it supports even some themes so central for conservatism, namely the defence of social capital against the forces of anarchic change.[17]

As we can see, political liberalism as defended in this thesis is able to accommodate many, even conflicting, views. For those, to whom ecological crisis requires an immediate change towards deep-green life styles, this is, of course, one of its greatest weaknesses. However, if the central claims of this thesis are correct, the resilience of political liberalism when facing new problems turns out to be one of its main strengths.

[17] Some of the central green themes, such as limits of the natural resources and obligations to future generations, were brought up by some classic conservative thinkers like Edmund Burke and Thomas Malthus. A more recent representative of "green conservatism" is John Gray (1993).

# 1 THE TRAGEDY OF THE COMMONS

## 1.1 THE TRAGEDY OF THE COMMONS, PUBLIC GOOD PROVISION AND PRISONER'S DILEMMA

The fact that environmental problems often involve a collective action problem is well recognised in the literature (e.g Dryzek 1987, Gardiner 2011, Gilroy 2000, Pellikaan & Van der Veen 2002, Sandler 2004). This is hardly surprising, as the environment usually is something that people share with each other and thus actions by one can easily affect others. If one litters the public park, this influences how others enjoy the park. But more crucially, the environment is increasingly something in which a large number of people have a stake. The issue is not only that there is a particular group of "tidy" people, who enjoy their daily walk in the park only if the park is clean. In the most acute and serious environmental problems of our age, the pollution or degradation of the environment threatens the decent life prospects of a very large number of people (and non-humans as well). The "clean" environment is not only a matter of "taste" or "preference", but it is in the fundamental interest of large number of people and requires collective action among these people.

The two most familiar kinds of collective action problems arising in the environmental realm are Hardin's "Tragedy of the Commons" and the underprovision of public goods. "The Tragedy of the Commons" (ToC) captures the usual situation in collective use of some common-pool resource, such as common pasturelands, ocean fisheries, or common atmosphere. In the use of common but finite resources, it is in the rational self-interest of each individual to increase her use of the resource because her personal gain from increasing her usage outweighs her proportionate share of the damage done to the common-pool resource that is dispersed to the whole group of users.

Environmental collective action problems also arise in the case of public goods that are goods from which any member of the public may benefit regardless of whether or not she contributes in any way to their provision. Many environmental goods, including those vulnerable to ToC, have these public goods qualities. For instance, sustainable fish populations, biological diversity, clean air, or stable climate are public goods whose benefits anyone can enjoy once they are sustained. Yet these qualities makes these goods vulnerable to classical problems of free-riding: If an individual cannot be excluded from the use of the public good, she can use the public good that is provided by others without contributing herself.

The fact that many environmental goods have both the qualities of a public good and are vulnerable to ToC makes things worse.[18] Just as it is in the

[18] The environmental goods and natural resources vulnerable to ToC differ from *pure* public goods, because their consumption is open to rivalry, that is, the use of the resource by one user decreases the

rational self-interest of each user of a resource to increase her own usage, it is also in her self-interest not to contribute in providing the benefits of the sustainable use of the resource accruing to all users. In other words, individual users are individually better-off by not limiting their own use of the resource, whatever others do. On the one hand, if others increase their use, then the individual who would unilaterally limit her use would only have to bear the costs of limiting her use without accruing the benefits of the sustainable use (CD in Table 1 below). So she is better-off by not limiting her use. If others, on the other hand, limit their use then an individual is also better-off by not limiting because then she can free-ride and enjoy the benefits of the sustainable use of the resource provided by others (DC in Table 1).

The above structure connects environmental ToCs to the classic game-theoretic formulation of the collective action problem called *Prisoner's Dilemma* (PD). In PD there are two players, who have to choose between two courses of action. Either they can choose to cooperate, that is, choose to act in a way that is best to them *both*; or the players can refuse to cooperate, that is, to defect and choose to act in a way that is best to *each* of them individually. Two players must choose their strategies simultaneously and in ignorance of each other's choices. Since they are rational maximizers of their interests and the cooperative choice (CC in Table 1) is only second best to them individually, both of them will choose to defect producing an outcome of universal defection (DD) that is only third best to each individually and second best collectively.[19] The most crucial feature of this game from collective action point of view is that parties will choose to defect no matter what the other player chooses. In game theoretic jargon, defection is the *dominant strategy* for each player.

possibilities to use the resource by others. In the case of pure public goods, such as security or knowledge, this is not the case and thus they are often characterised by the term "non-rivalness of consumption". The environmental goods and resources open to rivalness of consumption and vulnerable to free-riding are often called *common-pool resources* in the literature (see e.g. Dietz et al. 2002).

[19] This result has invited Derek Parfit (1984, p. 88) to call the theory that concentrates on the individuals' self-interest *directly (collectively) self-defeating*: in the PD contexts individuals who seek to maximize their interests will thereby cause their interests to be worse satisfied than these would have been satisfied if none had seek to maximize their interests. It is worth noting that the interests need not be narrowly limited to one's own wellbeing, but only that they are sufficiently self-referential, or have a time-indexed component (Gardiner 2011, p. 57).

**Table 1**. *CC = both/all cooperate; DD = both/all defect; DC = individual herself defects and the other/others cooperates, i.e. the individual is a free-rider and enjoys the benefits of cooperation, while others bear the burden; CD = individual herself cooperates while others defect, i.e. individual bears the burden but receives no benefits of cooperation, while others bear no burden at all.*

| Order of preference of the outcomes for each individual | Prisoner's Dilemma |
|---|---|
| 1. Best | DC |
| 2. Second-best | CC |
| 3. Third-best | DD |
| 4. Worst | CD |

In the original two-person game players are two individuals, like two prisoners in the story from which the Dilemma gets its name.[20] But the game can also be generalized to larger groups (the so-called N-person game), where each of the N persons has to make the same binary choice between two strategies (Hardin 1982). The cooperative strategy could, for instance, be a choice of limiting the number of one's animals grazing at the common pasture and defection could be the one of continuing the unlimited use of grazing land by adding animals to one's own herd on the common. As in the original two-person game, the players in the N-player game will have the defection as their dominant strategy. Thus, each herder will add animals to his herd leading to the tragic overuse of the common.

[20] Luce and Raiffa (1957, p. 95) describe the well-known story of PD as follows: "Two suspects are taken custody and separated. The district attorney is certain that they are guilty of a specific crime, but he does not have adequate evidence to convict them at a trial. He points out to each prisoner that each has two alternatives: to confess to the crime the police are sure they have done, or not to confess. If they both do not confess [CC in the Table 1], then the district attorney states he will book them on some very minor trumped-up charge such as petty larceny and illegal possession of a weapon, and they will both receive minor punishment; if they both confess [DD] they will be prosecuted, but he will recommend less than the most severe sentence; but if one confesses and the other does not [DC], then the confessor will receive lenient treatment for turning state's evidence whereas the latter will get "the bock" slapped at him [CD]."

## 1.2 ECO-AUTHORITARIANISM, ECO-ANARCHISM AND THE EARLY CRITIQUE OF TOC AND PD

Vulnerability to PD and free-riding problem connects the environmental issues to the classical questions of political philosophy, most notably to those about the justification of political authority that motivated social contract theorists. In many contexts, Thomas Hobbes's *Leviathan* has been labelled as the first complete articulation of a philosophical justification of the political authority that is based on an argument about public good provision (e.g. Gauthier 1995, Hobbes 1960, Taylor 1987). The public goods that Hobbes was concerned were the social order and national defence. Without provision of these, there would be not only actual violence, but also such a pervasive uncertainty undermining the incentive to invest resources to any meaningful projects with delayed returns. But although everyone would prefer the condition of peace and security to the "war of all against all", the latter is the result of everyone pursuing her own interests without restraint. In the state of nature everyone also realizes that they cannot alter the dynamics of situation by their own behaviour. In the absence of political authority (that is, in 'the state of nature', often characterised as a game of PD), personal pacifism merely makes one prey to others (CD in Table 1). Unless everyone be persuaded or forced to lay down her arms simultaneously, nothing can prevent the continuation of the war of all against all.

Hobbes' solution was the erection of a sovereign political power, the *Leviathan,* that would constrain everyone to live peacefully and to contribute to the provision of social order and national defence. Given the apparent similarities in the PD-structure of Hardin's ToC and Hobbes' state of nature, it is no surprise that Hardin's article was followed by many eco-authoritarian proposals that offered "a Hobbesian solution" to problems of degradation of the environment and depletion of natural resources (although Hardin's own formulation "mutually agreed mutual coercion" is open to various interpretations).[21] According to eco-authoritarians, in the absence of some

[21] An alternative solution considered by Hardin himself, and supported by many environmental economists and green libertarians, is privatization of the commons, which removes the public good and is alleged to make individuals to bear more directly the costs of overusing the resource and thus to make the sustainable use an individually rational choice for them (see e.g. Hardin 1977, Anderson and Leal 1992). The most apparent problem with the privatization as a solution for ToC and for the underprovision of public goods is that the private property system is a public good itself that faces a (second-order) freeriding problem and thus cannot be provided unless there is sufficient assurance that the system is complied with by others as well. So the assurance problem needs to answered first, e.g. by the establishment of legitimate political authority, even if the actual policy regime would then use the private property as a way to manage the resource (as, in fact, is the case in Rawlsian kind of political liberalism). A thorough treatment of the issue of private property within an ecologically sustainable political liberalism is out of the scope this thesis, however. Generally, my view on this issue is close to the one offered by Marcel Wissenburg's (1998, 1999) 'the restraint principle', which sets constraints to

external authority people are similarly unable to refrain from polluting the environment and from the overuse of resources as are the individuals in the Hobbesian state of nature unable to refrain from violence. As Ophuls (1977, p. 154) has put it: "Only a government possessing great powers to regulate individual behavior in the ecological common interest can deal effectively with the tragedy of the commons." Ophuls's (1973) earlier article was named even more bluntly "Leviathan or oblivion", emphasising his view about the dire choice that humanity is facing.[22]

The eco-authoritarian proposals were followed by a huge amount of criticism targeting their antidemocratic and coercive views. A number of critics argued that state coercion is not the solution, but rather the source of the problem. It is the erosion of communal and democratic control that has enabled economic and powerful elites to pursue environmentally destructive developments, with the support of the coercive state powers. According to these critics, what is required is less rather than more coercion and centralisation of power, and more rather than less public participation in the governance (Eckersley 1992, Dryzek 1987).

As a counter-reaction to eco-authoritarian state-centred proposals, many green political theorists have also been sympathetic to a sort of anarchistic thinking, according to which the state's continued existence only exacerbates the fundamental, underlying cause of which the environmental crisis is an effect (e.g. Bookchin 1971, Carter 1999, Sale 1985). According to the eco-anarchistic view, the solution to environmental crisis lies rather in smaller communities in which human beings regulate their social relations and their relation to the environment spontaneously on the basis of mutual aid and sociality. [23]

These anarchistic views were supported by many game-theoretic models that aimed to undermine the central conclusion of (eco-)authoritarian proposals, that is, that the logic of collective action in the provision of public goods can always be described as a PD and as a result of this individuals are incapable of supplying public goods by a cooperation among themselves but need to be supported by some external authority (see Taylor 1976). According to these alternative models, when the collective interaction of the individuals is analysed more realistically as repeated games of PD (or some other

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our rights to use of ecological resources (but see also footnote 47). For further discussion on privatisation and private property regimes in the context of ecological resources, see Bromley (1991), Hanna and Munasinghe (1995), Hayward and O'Neill 1997), and Oksanen (2001).

[22] This makes it easy to understand why eco-authoritarians are often called *survivalists* in the literature (see e.g. Eckersley 1993). For other eco-authoritarian proposals, see Heilbroner (1974), Westra (1998); the latest appeal to an authoritarian government to prevent climate change has been made by Shearman and Wayne Smith (2007).

[23] Sale (1985), for instance, calls his anarchistic vision "bioregionalism" and Carter (1999) "cooperative autonomy". These pastoral ideals have eloquently provoked statements, such as Goodin's, that "greens are basically libertarian-cum-anarchists" (Goodin 1992, p. 152).

alternative games) more rational strategies are open to individual players.[24] For instance, adopting a conditionally cooperative strategy, that is, cooperating only if others cooperate as well, may become rational for the players of such repeated games (Axelrod 1984, Bardhan 1993, Kreps et al. 1982, Taylor 1987).[25] This opens the door to spontaneous and self-originating cooperation among rational individuals without any interference by some eternal authority (Runge 1984a, Taylor 1987).[26]

After the publication of Hardin's article several empirical studies also showed that the assumptions behind ToC (and PD) did not hold up in many actual cases in which common environment and natural resources are used (Baden & Noonan 1998, Bardhan 1993, Dietz et al. 2002, Ostrom 1990). For instance, the use of the term 'commons' in Hardin's tragedy reflects, first of all, that there is open access to the resource, to the common pasture in his case. The rationality of growing the size of one's own herd regardless of what other users do – that is, defection as the dominant strategy –and inevitably resulting overgrazing follow from this assumption. In the literature of economics and public goods this assumed characteristic is usually called non-excludability or difficulty of exclusion, and it means that "the physical nature of the resource is such that controlling access by potential users may be costly and, in the extreme, virtually impossible" (Feeny et al. 1998).

Yet, empirical cases clearly showed that this assumption of open-access (or non-excludability) does not actually hold, or holds only partially, in many instances of the use of natural resources (Baden & Noonan 1998, Bardhan 1993, Dietz et al. 2002, Ostrom 1990, Seabright 1993). Studies have shown that even the use of common grazing lands of medieval and post-medieval

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[24] In *Anarchy and Cooperation* Michael Taylor (1976), first, questions whether PD is the correct representation of individual actors' preferences in public goods interactions but, secondly, assuming that PD is correct, he aims to show that there are still prospects for voluntary cooperation in PD-supergames (in which the basic PD games are played in an indefinite number of times).

[25] Axelrod (1984) set up "tournaments" in which different strategies (PD being one them) were paired against each others and against themselves in PD-supergame and then they were ranked according to their aggregate performance. The winner of these "tournaments" was a strategy of conditional cooperation that Axelrod called "TIT-FOR-TAT". In this strategy the player of the supergame chooses to cooperate (C) in the first constituent game, and in succesive games chooses to C also but if and only if the other player chose C in the preceding game.

[26] In other word, cooperation between individuals ensue without any change in the individuals' preferences and payoff expectations. This is why Taylor (1987) calls these *internal* solutions, whereas *external* solutions always change individuals' preference and payoff structure. Yet, it is good to note, that while the changes of the preferences and expectations in external solutions are typically enforced by some (centralized) external authority, this is not always the case. Some usual external solutions are *decentralized*, as Taylor calls them, in which the initiative for the change of preferences and expectations is dispersed amongst the members of the group. Normally the actual solutions are also a combination of centralised and decentralised solutions. I discuss more about the decentralized solution in section 2.4 of the introduction and in Article V.

England, which served as the historical antecedent of Hardin's commons, were not available to the general public but rather only to certain individuals who inherited or were granted the right to use it, and that even for these people, the use of the common was not unregulated. As Susan Jane Buck Cox (1985) writes, the decline of the commons system in England was the result of a variety of factors having actually little to do with the system's inherent structure of collective action between the users. Among these factors, she recognises the "widespread abuse of the rules governing the commons, land 'reforms' chiefly designed to increase the holdings of a few landowners, improved agricultural techniques, and the effects of the industrial revolution." (Buck Cox 1985, p. 49)

In a series of papers Carlisle Ford Runge (1981, 1984a, 1984b) also argued that it is implausible to assume that individual resource users would generally have a dominant strategy of free riding (i.e. defecting). In many situations the users are living in the same area for generations to come and so they are highly dependent on their natural resources. Thus the users will prefer to find some way of limiting their own use as long as others also are committed to limit their use. According to Runge (1984a), the situation faced by the users should therefore be analysed as a repeated *Coordination Game* rather than one-shot PD.[27] In Coordination Games participating individuals prefer cooperation to defection. As a consequence, there is no need for a strongly coercive political authority that would prevent free-riding, as in the case of PD (and in the case

[27] Christopher McMahon (2001) also argues that the fact that individuals often do voluntarily contribute to the provision of public goods, even when free-riding would maximise their individual goals, establishes that there must be some other good reason for individuals to contribute. According to McMahon, the reason is based on, what he calls the principle of "Collective Rationality", which directs an individual to compare the value of alternative outcomes not only as produced by her own individual actions (of either contributing or declining) in isolation but rather in combination of the actions of others. According to the principle of "Collective Rationality", an individual therefore has a sufficient reason to contribute when the value of an outcome in which she and sufficient others contributes exceeds the value of the outcome in which no one contributes (i.e. universal defection). In other words, individuals guided by the collective principle will assign the same value to their own unilateral defection that they assign to universal defection and the collective action problem they face is transformed from PD to a Coordination Game (McMahon 2001, 25).

Many commentators have doubted, however, whether the principle of "Collective Rationality" is really an alternative to individual rationality and whether the most acute PD situations can so easily be transformed to more solvable Coordination Games, as McMahon's argument suggests (Gaus 2003, Weber 2003 see also Jamieson 2010b). As Weber notes, more needs to be said why individuals should opt for the collective principle instead of the individual one if the basis for the choice still is the achievement of their individual goals. The answer cannot be that adopting the principle of "Collective Rationality" will solve the PD, because the choice between a collective and an individualistic principle has the structure of PD itself: each person fares best if he adopts an individual principle while others adopt a collective principle; worst if he chooses the collective principle while others adopt a individual principle (Weber 2003, 174).

of Hobbes if his 'state of nature' is interpreted as PD).[28] Rather the political authority, the law and politics in general, are required to select the range of viable coordination points (see e.g. Waldron 1999).[29]

A typical example of an (Impure)[30] Coordination Game would be a climate policy choice in which all parties prefer to have a policy but disagree about the form of the policy. One prefers emissions trading to carbon tax while the other prefers tax to trading. Yet the option of having a policy, even a policy that one does not prefer, is better than no policy at all. Put in the game-theoretic jargon, there are two coordination points (trade or tax) the either of which is preferred by both of the parties to options of having no coordinated climate policy.[31]

Another game theoretic model, discussed in Article I in some detail, in which individual parties prefer cooperation (CC in table 1) to both their individual (DC) as well as universal defection (DD) is *Assurance Game*. The difference between Assurance and Coordination Game is that in Assurance Game individuals still have a strong preference to avoid their worst option that they cooperate alone while others defect (CD). Therefore, the cooperation in Assurance Games is dependent on the fact that individuals can be assured about the sufficient cooperation by others.[32] This assurance can be offered by

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[28] As pointed out by Gaus (2003), one way to interpret Hobbes's theory is to depict 'the state of nature' as a no-coordination point and all civil societies as coordination points. And because Hobbes's characterisation of the state of nature is so horrible, Hobbes can show that everyone benefits by any coordinated outcome (by any kind of government).

[29] But consider the following example. The laws regarding property rights have been the coordination point for a society so far. Recently, however, some environmentalists have refused to obey them generally anymore, because in their view the property right of some logging firms, energy producers, or petroleum companies support environmentally destructive outcomes (see e.g. Article III). For these environmentalists the law on property right is not preferred anymore to their own way of seeing things, and for them the situation is not a coordination game anymore (see e.g. Gaus 2003).

[30] In *impure* Coordination Game parties benefit unequally from particular equilibrium points (i.e. coordination points), like the parties in the example of alternative climate policies. In their classic introduction to game-theory Luce & Raiffa (1957) call impure coordination games "The Battle of Sexes". In pure Coordination Game the benefits are equal.

[31] In an unpublished article, Waldron has also analysed international climate change policy as a Coordination Game. Gardiner (2011, p. 87–102) provides a thorough critical assessment of this proposal. The main claim of Gardiner is that Waldron's assumptions for his view do not actually hold and that the international climate policy should be treated as PD instead (or even worse if the intergenerational collective action problem, discussed below, is taken into account).

[32] Environmental public goods such as fisheries, lakes, the atmosphere, and so on are typically such that they can be exploited up to some critical level while largely maintaining their integrity, but if the exploitation rates go beyond that level, the value of those public goods falls catastrophically. In other words, the provision of environmental public goods requires that a sufficient number of individuals limit their use so that the critical level is not exceeded. Therefore, Assurance Game is often taken to be the correct characterisation of the environmental public good interactions (see e.g. Gillroy 2000, Runge 1984a, Taylor 1987).

an external authority or by some decentralised solution of social norms and sanctions for instance (see Runge 1984a, Taylor 1987). Article V of the thesis investigates practices of attributing moral responsibility for harm from this viewpoint.

## 1.3 THE RELEVANCE OF TOC AND PD IN THE CASE OF LARGE-SCALE ENVIRONMENTAL PROBLEMS

The critical discussion after Hardin's article stressed the diversity of the settings in which common-pool natural resources were used and which all have a profound effect on whether the situation is best to be described as ToC (and PD), or not. At same time, however, the empirical studies and game-theoretic models highlighted the conditions required for the conditional cooperation among the resource users and the successful evolution of the self-organized arrangements of sustainable resource use. Among these conditions Elionor Ostrom (1990, p. 211) identifies that the groups of users are relatively small and stable and that the participants do not have too high discount rates for the future benefits of the cooperation.[33] Similarly Michael Taylor notes that the size of the group matters, since "Cooperation can be sustained only if conditional Cooperators are present and conditional Cooperators must be able to monitor the behavior of others." At least they need to know that sufficient number of others cooperated in the preceding game, but "[c]learly, such monitoring becomes increasingly difficult as the size of the group increases." (Taylor 1987, p.105)

The relevance of the group size was also highlighted by Mancur Olson's (1971) classic study *The Logic of Collective Action*. The main contention of the study was that the larger a group is the farther it will fall short of providing an optimal supply of any collective good, and the less likely that it will act to obtain even a minimal amount of such a good. Game-theoretically the same result was showed by Russell Hardin (1982). According to Hardin, the N-person PD characterizes the public goods interaction generally whenever the size of the group is greater than the ratio of individual player's benefits to costs. Think, for instance, a group of people who can each contribute 1 unit and provide cooperatively a public good that benefits them each with 4 units. That is, the ratio is 4. If the group consists only two or three persons, the pay-offs of each individual from contributing will be greater than from not contributing. But whenever the group is larger than four persons, the individual payoffs

[33] The much discussed issues related to discount rate and intergenerational justice are explored in Article IV.

follow those of N-person PD and not contributing is the dominant strategy to each (Hardin 1982).[34]

As Russell Hardin's analysis shows, it not the size itself that matters, but rather how the size of the group is connected to the ratio of individual's benefit from the public good to the cost of her contribution. According to Olson, the group is able to provide a public good without external support only if the benefit to any individual from the public good is so large that she would be better-off if she would pay the entire cost of providing the public good rather than go without the good. While it is possible that in some cases this holds also to small fractions of a much larger groups, as Hardin notes, in many cases the larger the group becomes the smaller becomes the effect that each individual can have to the provision of the public good.

Consider a city that could provide a public good of improved air quality in the city if approximately million car owners of the city would provide their cars with a pollution-control equipment. In other words, improved air quality is a threshold good. Each car owner can calculate that it is highly unlikely that her contribution would make any real difference (the chances are about one in million) and without an assurance that million other car owners will also connect the equipment she can expect her contribution to be futile. Since the expected benefit of each individual thus is extremely low, the cost of connecting the equipment can easily outweigh it. And similarly, if an individual car owner is sure that there are sufficient (that is, approx. million) others to provide the good air quality, the individual can calculate that her disconnecting the equipment (that is, free-riding) would unlikely have any real difference to the provision of the public good and most likely her contribution is therefore futile again.

In the use of global environmental commons such as a stable atmosphere this could end up in a situation where the difference made by one individual is so miniscule that it could easily be outweighed by any gains of increasing one's pollution.[35] It is also clear that the ability of individuals to monitor the behaviour of a sufficient number of others becomes increasingly difficult and more costly as the size of the group increases. And yet the relatively low costs of monitoring are, according to Ostrom, highly relevant for the successful evolution of self-organised regulation. Many political theorists have therefore concluded that, the masses of critical commentaries notwithstanding, ToC and its underlying PD structure still holds in the most serious large-scale, in many cases even global, environmental problems (see e.g. Dryzek 1987, Gardiner 2011, Klosko 2005, Sandler 2004).

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[34] If the group would consist 3 persons each individual's pay-offs would be following: CC: 3, DC: 2.666..., CD: 0.3333..., DD: 0. If the group consists 5 persons: DC: 3.2, CC: 3, DD: 0, CD:-0.2. In other words, in the latter case the pay-offs structure follows PD.

[35] This is why large-scale environmental problems have been argued to pose a serious challenge to individual act utilitarianism (see e.g. Parfit 1984, Jamieson 2010b).

The group size's connection to individuals' benefit and to their ability to monitor others are not the only facts that are relevant for the evolution of cooperation between individual actors. Social bonds and shared norms of reciprocity and trust are also often crucial (e.g. Ostrom 1990). Though the emergence of these becomes harder as the size of the group increases, the existence of deep disagreements about the relevant environmental facts and normative values (discussed more in detail in the Part 2 of this introductory essay), can easily increase the distrust and sense of lacking reciprocity between various users. As explored in some detail in Article I, this can increase the likelihood, even in smaller groups, that individuals adopt the strategy of PD (i.e. non-cooperation as their dominant strategy), or even worse. The facts related to how individuals (or individual subgroups) perceive the situation and how they interpret their own and others' interests in it, can therefore prevent the conditional cooperation even within local small-scale communities, legitimising the PD and ToC analyses.

## 1.4 COLLECTIVE ACTION PROBLEM BETWEEN GENERATIONS?

Above I have briefly explained, why the large-scale dispersion of the environmental effects makes ToC and PD still relevant for understanding the acute problems of our age. Mark Sagoff (2011) has recently argued, however, that the most serious large-scale environmental problems, such as climate change, cannot be analysed as a collective action problem, ToC or PD. According to Sagoff, this is so, because the cooperative option (CC) is not mutually beneficial to all generations; and yet, in ToC and PD it is the possibility of mutual and reciprocal advantage that makes cooperation preferable to universal defection to each of them, and seems to explain why there is a collective action problem in the first place. The intergenerational situation, however, lacks the possibility of mutual advantage. Earlier generations cannot benefit themselves by 'cooperating' with later generations, whereas later generations are almost entirely dependent on the 'cooperative' goodwill of earlier generations, indeed they are dependent on them for their sheer existence! [36]

Sagoff is right about this crucially asymmetric structure of intergenerational relations. The argument of this thesis is, however, that this structure only makes the collective action problem worse and elusive to the traditional solutions that are justified by the mutual reciprocity of advantage,

[36] The notion of 'generation' is somewhat ambiguous. E.g. it is not always clear how one generational unit is determined in relation to the previous and to the next one. The discussion in terms of 'generations' here refers particularly to the relation between collective units of people, which are temporarily so distant that they cannot have direct mutual interaction. (For discussion see e.g. Gardiner 2011, p. 145–148.)

as will be discussed in the following sections. But the asymmetry and lack of mutuality does not make the intergenerational situation wholly unhelpful to be analysed by using PD as a model (see also Attas 2009, Gardiner 2011).

In order to see this, let us look at the case of climate change a bit more closely. On the basis of our current best understanding of atmosphere (e.g. IPCC 2014), a stable climate that is not dangerous to any generation requires that the concentration of greenhouse gases (GHGs) in the atmosphere is limited to certain level.[37] The maintenance of a stable climate thus requires that no generation emit too much GHGs. In other words, we may say that a stable climate requires that (a sufficient number of) generations limit their GHG-emissions at the sustainable level and direct resources from their own consumption to finance required emissions restrictions that benefit mainly future generations.

Consider now the situation of each generation $G_n$ deliberating about whether to restrict their GHG-emissions at the sustainable level, or whether to let emissions to grow above it and thus allow using the resources required for emissions restrictions to their own consumption. When $G_n$ faces this choice they know whether the previous generations $G_{...n-2,\ n-1}$ has restricted their emissions or not. They know also that their choice cannot possibly affect $G_{...n-2,\ n-1}$ 's decision. [38]

In this situation $G_n$'s first preference is that the earlier generations $G_{...n-2,\ n-1}$ have restricted their emissions and the stable climate is provided, but that they themselves do not restrict and thus save the costs of emissions restrictions and use the resources rather to their own consumption (DC in table 1). In other words, $G_n$ free-rides. The second preference of $G_n$ is that both, $G_n$ and $G_{...n-2,\ n-1}$, restrict their emissions (CC) and a stable climate is sustained, but now $G_n$ bears also the costs of this, which decreases their own consumption. $G_n$ 's third preference is that neither they themselves restrict nor $G_{...n-2,\ n-1}$ has restricted the emission (DD) and climate becomes dangerously unstable. Finally, the fourth is the situation, in which $G_n$ themselves restrict but $G_{...n-2,\ n-1}$ has not restricted (CD): no benefits of stable climate but only the costs of emissions restrictions.

As we can see, the most plausible interpretation of the preference order of each generation appears to be the one of PD as presented earlier in table 1. But as discussed by Stephen Gardiner (2011, p. 160-184), the absence of the possibility to resort to mutual benefit (or collective rationality based on mutual advantage) makes the intergenerational problem more intractable than the traditional ToC or PD. The problem is not only that it resists the traditional

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[37] The current estimations of IPCC (2014) are that the concentration in 2100 should be 450 part per million (ppm) or lower if the warming is wanted *likely* to maintain below 2°C over the 21st century. (For comparison, the concentration in 2011 is estimated to be 430 ppm.) Warming of 2°C relative to pre-industrial levels is often held as the threshold for dangerous climate change, though the latest estimates indicate that it might be even lower, e.g. 1.5°C.

[38] In game theory, games, in which one player chooses before others, are called sequential.

standard solutions, discussed above. In the intergenerational problem, cooperation is not beneficial for the so-called "first" generation, who is asked to benefit later generations by 'cooperation' but who has received no benefits from previous generations. Thus pure self-interested (generation-relative) reasons that are usually thought to motivate parties' cooperation (or the acceptance of cooperative solutions discussed in Part 2) in PD and ToC, cannot motivate the first generation. And, as Gardiner notes, this asymmetrical situation of the first generation also threatens to undermine cooperation by subsequent generations, because when "first" generation does not cooperate, then the next one becomes the "first" who hasn't received anything from the previous one and finds no generation-relative reason to cooperate either, and then the third generation becomes the "first", and so on.

These worries about the asymmetric and intractable nature of the collective action between generations are serious. But as will be argued in the thesis and in the rest of the introductory essay, they do not pose insurmountable barriers to political and ethical theorising in the line of liberal contractualism.

# 2 ETHICAL AND POLITICAL TRAGEDY

## 2.1 FROM TOC TO "ETHICAL" AND "POLITICAL" TRAGEDY

In the first part of this introductory essay, I defended the view that the intense critical debate raised by the Garrett Hardin's article notwithstanding, many large-scale, highly dispersed environmental problems may still be theorised by using the models ToC and PD (or a transformation of these). Many environmental goods, like breathable air, drinkable water, stable atmosphere, can be also regarded as public goods that are necessary for satisfactory and sustainable human life, just like, say, national defence and legal order. Not surprisingly then, many recent liberal political thinkers have added "protection from a hostile environment" or "pollution control and regulation of environmental damage" to the list of indispensable public goods whose provision justifies the political authority of the state (e.g., Christiano 2008, Klosko 2009).

A growing number of environmental political theorists have also started to emphasise the vital role of states in solving environmental problems (Barry & Eckersley 2005, Eckersley 2004). Drastic changes in the production and consumption patterns that are needed require costly regulation and legal proscriptions that are often also costly for citizens. Thus it seems likely that any collective agent holding less legitimate authority than the existing states would have problems in justifying the costly compliance of citizens.

At the same time, it seems obvious that the existing institutional agents, such as states, are severely insufficient for realising a solution without a radical change in their structure and normative grounds of legitimacy (see e.g. Cripps 2013, Gardiner 2011, Schwenkenbecher 2013). The question here is not only about the limited capacity of individual nation states to provide solutions to the global ToCs that require international cooperation between states (see Gardiner 2011, Sandler 2004).[39] The question is also about the normative grounds of the legitimate authority of nation states that the complex interrelation of local, global and intergenerational levels of current environmental issues highlights.

For one thing, as Stephen Gardiner in his recent book *A Perfect Moral Storm: The Ethical Tragedy of Climate Change* (2011) notes, the fact that many serious environmental problems are at same time global as well as

[39] See also e.g. IPCC (2014, p. 10-11): "When a country emits GHGs, its emissions cause harm around the globe. The country itself suffers only a part of the harm it causes. It is therefore rarely in the interests of a single country to reduce its own emissions, even though a reduction in global emissions could benefit every country. That is to say, the problem of climate change is a "tragedy of the commons" (Hardin, 1968)."

intergenerational may change the global (and *intra*generational) situation significantly.[40] Consider the case discussed in Article III. A society decides to increase the generation of coal power and thus its future GHG emissions. But due to vast global dispersion of the effects of climate change, it is clear that this decision will not only have effects on the current and future citizens of this society but also on people around the globe, and especially on those that are likely to be most vulnerable to the impacts of global climate change. Still in many contemporary theories of political philosophy, intergenerational issues are mainly treated through nation states, which are understood as *the sole* political units through which the interests of their citizens are represented in perpetuity (e.g. Rawls 1971, 1999).[41] This view is clearly inadequate and the thesis provides a defence of some principles of cosmopolitan individualism, according to which it is primarily individuals that matter in global and intergenerational ethics (Articles III, IV, and V).[42] The defence of these principles – namely the principles of fairness, the no-harm principle and sufficientarianism – is summarised in the following sections of this introductory essay.

Furthermore, the legitimacy problem lies also within states, where the legitimate authority and effective steering capacity of governments is often threatened by the severe internal disagreements and conflicts about environmental policies. Only a year after Garrett Hardin's article Beryl L. Crowe published in *Science* a critical assessment of Hardin's approach in modern pluralistic society. In order to make a centralised administrative solution to ToC viable, Crowe suggests,

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[40] Gardiner (2011) uses the metaphor of a "perfect storm" to describe the situation. According to this metaphor, there is an unusual intersection of a number of serious and mutually reinforcing storms, namely the "global", "intergenerational" and "theoretical", and this creates an extraordinary and unprecedented challenge to us who need to face the current environmental crisis.

[41] Rawls thought that the main subject of justice is the basic structure of "a *closed* society" (emphasis added), as he writes, "that is, we are to regard it as self-contained and as having no relations to with other societies" (Rawls 1993, p.12). This view is also shared by standard climate economics and the particular problems related to it in the intergenerational economics are discussed in some detail in Article IV.

[42] The same reasons make the ideals of eco-anarchism also highly implausible. According to one leading advocator of so-called "bioregionalism", a version of eco-anarchism, Kirkpatrick Sale (1980), the conflict within a community organised to live harmoniously with its environment should not be settled by a recourse to any formal principles of justice or any political institutions external to the community. But in the face of globally interconnected, complex and uncertain problems we also seem to need more rather than less interaction between local and national communities; and, if that is the case, it seems that we would need some principles that regulate these inter-community relations. Perhaps unsurprisingly then, a leading representative of social ecology, another popular version of eco-anarchism, Murray Bookchin (1992) allows the possibility for a 'confederal agreement' between communities. But, as noted by John Barry (1999a, p. 93), "from this it is not stretching things too far to suggest that this agreement functions as a sort of 'ecological social contract', which on familiar contractarian grounds legitimises the state."

> *Hardin has made three critical assumptions: (i) that there exists, or can be developed, a "criterion of judgment and a system of weighting …" that will "render the incommensurable … commensurable…" in real life; (ii) that possessing this criterion of judgment, "coercion can be mutually agreed upon," and that application of coercion to effect a solution to problems will be effective in modern society; and (iii) that the administrative system, supported by the criterion of judgement and access to coercion, can and will protect the commons from further desecration. (Crowe 1969, p. 1104)*

Crowe contended that these assumptions are "so questionable in contemporary society that a tragedy remains in the full sense in which Hardin used the term. Under contemporary conditions, the subset of technically insoluble problems is also politically insoluble, and thus we witness a full-blown tragedy…".[43] Think about the first assumption. As discussed in some detail in Article I of the thesis, even in many local settings of natural resource use people disagree deeply about the environmental facts and relevant knowledge as well as about the relevant values and normative criteria that should guide the choice of the "coercive" policy measures. John Rawls famously called the sources of such disagreements as the "burdens of judgment". Among these, Rawls lists (Rawls 1993, p. 56–57):

- The evidence – empirical and scientific – bearing on the case is conflicting and complex, and thus hard to assess and evaluate.
- Even when we agree fully about the kinds of considerations that are relevant, we may disagree about the weight, and so arrive at different judgements.
- Because our concepts, and not only moral and political concepts, are vague, we must rely on interpretations that are often controversial.
- The way we assess evidence and weigh moral and political is shaped by our total life experiences, which of course differ.

[43] Here Crowe comes close to what one the most famous radical liberal pluralist, Isaiah Berlin writes: "If, as I believe, the ends of men are many, and not all of them are in principle compatible with each other, then the possibility of conflict – and tragedy – can never wholly be eliminated from human life, either personal or social." (Berlin 1969, p. 168–69). According to Berlin' radical pluralism, there is no single answer, which claims to be perfect and true, because "there are many values, and they are incommensurable". Most liberal theorists, like Rawls, tempt to support a more modest view of reasonable pluralism, however, according to which the conflicting information and values are not incompatible (or incommensurable) conclusively, but only because people exercising their powers of reasoning reach conflicting conclusions.

- Often there are different kinds of normative considerations of different force on both sides of an issue and it is difficult to make an overall assessment.

As the discussion in Article I aims to make evident, the existence of many environmental disputes and policy conflicts can to a great extent be explained by the burdens of judgement. Moreover, the global and intergenerational nature of the most acute environmental problems is likely to make these disagreements even more intractable, because our moral and political concepts are seriously underdeveloped (and are thus even more vulnerable to controversial interpretations) in many relevant areas, including global justice, intergenerational ethics, and the human relationship with the non-human nature (Hayward 1994, Gardiner 2011, Jamieson 2014).

The burdens of judgement that relate to complex, global and intergenerational problems also make the second and third assumptions questionable, as discussed in Article II. Even if Hardin's phrase "mutually agreed mutual coercion" would be interpreted more democratically, the legitimacy problems remain and will affect the effectiveness of the "coercive" policy measures. On the one hand, there is the challenge that motivate largely the eco-authoritarian proposals: the complexity of the environmental problems and the urgency to produce effective policy outcomes seems to fit poorly with the notion of democratic legitimacy that, due to burdens of judgement and deep disagreements, bases the authority of political decisions in the pluralistic societies on procedural rather than epistemic requirements. On the other hand, especially because of the global and intergenerational scope of environmental problems, the disagreements concern not only the substance of decisions, but typically also the procedural requirements themselves. It seems clear that the disputed issues related to relevant democratic community and to legitimate participation and representation of the interests of those who cannot participate – that is, most notable, the interests of nature and of future generations – cannot be resolved without having recourse to normative justification that transcends the democratic and deliberative processes themselves.

The thesis suggests some promising ways to solve these "ethical and political tragedies". Article II defends a specific way to connect the epistemic quality of environmental policies to their democratic legitimacy and authority. Articles III, IV, and V link democratic decision-making with the global and intergenerational principles mentioned above. The following sections of the introductory essay summarise the main content of these arguments.

## 2.2 FAIRNESS AS A JUSTIFICATION FOR A POLITICAL AUTHORITY TODAY

In *A Theory of Justice* John Rawls famously introduced his contractualist justification of principles that should "specify the social cooperation that can

be entered into and the forms of government that can be established" in pluralistic societies (Rawls 1972, p. 11). The main idea of his theory, which he further developed in *Political Liberalism* (1993) and *The Law of Peoples* (1999), is roughly that, regardless of the burdens of judgements, in a suitably constructed hypothetical contract situation people representing different political values and doctrines are able to agree about certain principles of justice that would serve as the basis for the public reason to which they can resort in their political debates. Since the contract situation, or *the original position*, as Rawls calls it, is deliberately designed to reflect the equal and fair terms of interaction between people, the theory is termed, *justice as fairness.*

Central to Rawlsian justice as fairness is the idea of societies as modes of social cooperation that are mutually advantageous for all members of the society. But although the cooperation is mutually beneficial, members of a society have conflicting interests about how the benefits and burdens should be distributed. Thus they need publicly justified principles of justice to define the appropriate distribution (Rawls 1972, p. 4).

Rawls also famously thought that the social cooperation happens between generations over time, thus being one of the first political philosophers to have any systematic discussion of our moral obligations to future generations (Rawls 1972, p. 284–293). Rawls suggested that representatives in the original position would choose a *just savings principle* to guarantee a fair distribution of the benefits and costs of their social cooperation among generations. Rawls writes: "The just savings principle can be regarded as an understanding between generations to carry their *fair share* of the burdens of realizing and preserving a just society." (1972, p. 289, emphasis added)

Notwithstanding Rawls's discussion, justice as fairness has often been considered as inadequate in global and intergenerational environmental contexts, however. Many commentators have considered it questionable as to whether the international and intergenerational interaction between people, so typical to many environmental issues, can be meaningfully described as involving social cooperation of a relevant kind for triggering requirements of justice in the similar way as it triggers them among citizens within one society (see e.g. Barry 1982, Blake and Taylor Smith 2013).

At the international level Rawls himself also thought that the relevant kind of social cooperation is lacking (Rawls 1999). His argument is complex, but one central reason for Rawls is that at the international level there are no similar major social institutions, namely the basic structure of a society[44], that allocates the benefits and burdens of social cooperation. In Article III my argument follows, however, the line of so-called cosmopolitan authors, most prominently Charles Beitz (1979, 1999) and Thomas Pogge (1994, 2008), who

[44] By the basic structure, Rawls means "a society's main political, social, and economic institutions, and how they fit together into one unified system of social cooperation from one generation to the next." (Rawls 1993, p. 11). As noted earlier, Rawls thought initially this basic structure for a self-contained closed society, having no relations to with other societies (Rawls 1993, p.12).

have argued, that the modern system of international trade and communication has all the relevant properties given by Rawls to explain what makes the basic structure so central. International institutions allocate the advantages of trade and of the use of global environmental commons, and the rules of these international institutions also set the basic framework for the particular interactions taken among international agents. Therefore, there is no morally relevant reason why justice as fairness should not apply at the level of international cooperation.

There are arguments against this cosmopolitan view provided by Michael Blake (2001) and Thomas Nagel (2005) based on the non-voluntary and coercive nature of intra-society cooperation, but I found also these insufficient to show that the Rawlsian account could not be expanded beyond political societies of nation states. Following the fairness-argument presented by George Klosko (1992, 2005, 2009) Article III suggests, however, that despite the more cosmopolitan application of the Rawlsian fairness-theory a moral difference remains between the obligations the members of a society have towards each others and those they owe to members of other societies. This difference is based on the specific role that fair democratic procedures, discussed in Article II and in section 2.6 below, should have in deciding the specific form in which the (indispensable) environmental public goods are provided.

The intergenerational level of the argument, presented in Article III, requires some additional comments, because, as noted earlier in section 1.4 of this introductory essay**,** the central properties of Rawlsian social cooperation, that is, mutual advantage and reciprocity, are lacking completely. Earlier generations can benefit later generations, but later generations cannot improve the situation of the preceding generations. Thus the 'cooperation' between generations does not work to the mutual advantage of the each 'contractor' and the motivation for the Rawlsian justice as *fair terms of social cooperation* seems to disappear at the intergenerational level (see Attas 2009, Gardiner 2009).

It should be noted, however, that the whole idea of Rawls's contractualist project is to construct the original position so that certain contingences and asymmetries of our *real* social circumstances, which could bias our treatment of others in fair and equal terms when making the choice, are eliminated. Using the suitably constrained original position as a device, Rawls thought, that the members of a society were able to derive the publicly justifiable principles. The original position, according to Rawls, models

> *what we regard (here and now) as reasonable restrictions on reasons that may be used in arguing for principle of justice to regulate the basic structure. Various formal constraints of the concept of right are modeled in the original position by requiring the parties to evaluate principles of justice from suitably general point of view. However rational it might be for the parties to promote the determinate and known interests of those they represent, should they have the*

> *opportunity, the constraints of right, joined with limits on information (modeled by the veil of ignorance), make that impossible. (Rawls 2001, p. 85–86)*

So we are told, that due to the 'veil of ignorance' featuring the original position, "no one knows his place in society, his class position or social status, nor does any one know his fortune in the distribution of natural assets and abilities, his intelligence, strength, and the like. I shall even assume that the parties do not know their conceptions of good or their psychological propensities." (Rawls 1972, p. 12). Due to these constraints, Rawls thought that representatives who are mutually disinterested and motivated purely to maximise their own self-interest are able to derive principles that reflect fairness and equality.

But, in the same way, Rawls attempts to eliminate the influence of the lack of mutuality at the intergenerational level.[45] Although the representatives in the original position do know that they all belong to the same society, they do not know to which generation of their society they would belong after the veil is lifted. Rawls calls this *present-time-of-entry* interpretation of the original position.[46] Furthermore, the representatives can assume that the principles of justice they will adopt in the original position "will be strictly complied with" after the veil is lifted. The idea of this requirement is to guarantee that their participation in the original position is not "in vain": the capacity for a sense of justice of those represented in the original position ensures that the principles chosen will be respected in the actual world (Rawls 1972, p. 145). Without this requirement the principles would immediately be vulnerable to free-riding problem. Though general compliance with the principles would be rational to all, individual non-compliance might be most rational for the defiant individual.[47]

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[45] Originally, in *A Theory of Justice* Rawls's solution was based on "motivational assumption", however, rather than on constraints of the original position. In *TJ* Rawls though that the mutually disinterested representatives are motivated *not* only by the promotion of their own interest but also that of their immediate descendants (children and grandchildren). (Rawls 1972, p. 128) This solution received lots of criticism (e.g. Barry 1977, English 1977) and later Rawls himself abandoned it (Rawls 1993, p. 273–274).

[46] Another way to interpret the original position would be a general assembly of all generations, that is, in the original position there would actual representation of every generation (or even of all actual and possible persons). Rawls rejects this interpretation, however, because such a notion would be beyond the boundaries of imagination (see Rawls 1972, p. 139). As pointed out by Attas (2009), there are also conceptual problems related to the interpretation, because the representatives would not know whether the person they are representing would actually exist or not. This will either lead to the Non-identity Problem discussed in Articles IV and V, or make the agreement among representatives highly impossible, because some will have to agree principles that will mean their non-existence. (Attas 2009, p. 196; see also Boonin 2014, Heyd 2009, Reiman 2007).

[47] In his important interpretation of Rawls's savings principle Marcel Wissenburg (1998, 1999) argues that "it would be irrational" for any generation (including the first one) to reject a system and

But, as pointed out by Daniel Attas (2009), the strict compliance requirement does not work in the way Rawls thought at the intergenerational level. Because of the *present-time-of-entry* interpretation of the original position, introduced above, there is always only one generation represented, and so the compliance requirement applies only to them, not to the representatives of other generations. Attas therefore suggests an application of another Rawls's constraints for the original position: "Principles are to be universal in application. They must hold for everyone in virtue of their being moral persons" (Rawls 1972, p.132). According to Attas, the point of this universality condition is together with other constraints of the original position to achieve the symmetry, of free and equal status, between the representatives. In order to do this "universality must apply to those whose interests ought to be *represented* (this includes all generations)" (Attas 2009, p. 204), and not only those of the one generation that is represented in the present-time-of-entry interpretation.

Holding the universality condition together with other constraints of the original position it makes sense for Rawls to claim that

> *the parties can be required to agree to a savings principle subject to the further condition that they must want all previous generations to have followed. Thus the correct principle is that which the members of any generation (and so all generations) would adopt as the one their generation is to follow and as the principle they would want preceding generations to have followed (and later generations to follow), no matter how far back (or forward) in time. (Rawls 1993, p. 274)*

In section 2.5, I also suggest that this understanding of the original position offers a plausible way to overcome the theoretical challenge posed by the so-called Non-Identity Problem to the intergenerational contractualism.

Finally, one issue, mentioned in section 1.4, deserves a further comment. For Gardiner (2011, see also 2009), a specifically difficult issue for contractualist view on intergenerational justice is the problem of the so-called "first" generation, who receives nothing from the earlier generations, and thus

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rules of social cooperation. This argument seems to lean heavily on Wissenburg's interpretation of intergenerational cooperation between generations *next* to each other. A generation that defects will be distrusted by the previous and the next generation, who could then exclude the defectors from the gains of cooperation. Under the standard assumption of Rawls's social primary goods (i.e. rights and liberties, opportunities and powers, income, wealth and self-respect), this would make the choice irrational, because the advantages of cooperation are always greater than the gains from defection, as Wissenburg notes. In the case of severely deferred environmental problems (e.g. global climate change or biodiversity loss), the most serious consequences of which are not experienced by the next generations, this argument is less plausible, however. It seems to me that in order to make the savings principle regarding the "deferred" ecological resources a rational choice for the mutually disinterested choosers in the original position, the universality condition together with other constraints of the original position, which make also the interests of those far in future to be represented, need to be required.

has nothing to be gained from the 'cooperative' option; that is, saving some resources for the later generations.

Recall the example given in section 1.4, in which a generation $G_n$ is deliberating whether to restrict their GHG-emissions at the sustainable level, or whether to let emissions to grow above it. They know that the previous generations $G_{...n-2, n-1}$ has not restricted their emissions to sustainable level, and they would thus be the "first" generation to do that. If that is the case, it is clear that the intergenerational atmospheric justice does not hold yet, and the problem faced by the "first" generation $G_n$ is how to move from this unjust situation to the just one recognised by the suitably constrained (intergenerational) original position.

But the situation of the first generation is typically a problem of a non-ideal theory, as Attas (2009) points out. In other words, it concerns a situation in which the principles of justice and the institution structures based on those principles do not hold yet. [48] For Rawls the central idea is that his theory is ideal in the sense that when justifying the principles, it assumes strict compliance (and universality) ensured by the capacity for a sense of justice of those represented in the original position. But since questions concerning the situation of the first generation belong to the unjust non-ideal world they have no bearing on the question of what the principles of justice should be (and what principles would be chosen at the original position). Some of the issues related to this kind of "transitional justice", as it might be called, are discussed in Articles III and V, and in the following section.

## 2.3 DUTIES OF TRANSITION

In the Rawlsian ideal situation, in which the social cooperation among people is governed by the principles of justice (including the intergenerational "savings principle"), everyone is presumed to be motivated by the sense of justice and do his part as upholding the (environmentally and intergenerationally) just institutions.[49] Yet it is all too clear that we live in a non-ideal world regulated by seriously unjust institutions, especially when it comes to social cooperation related to global and intergenerational

[48] But see the discussion in Paden (1997), Heyd (2009).

[49] Rawls describes the sense of justice as follows:

> *Now the sense of justice shows itself in at least two ways. First, it leads us to accept the just institutions that apply to us and from which we and our associates have benefitted. We want to do our part in maintaining these arrangements. We tend to feel guilty when we do not honor our duties and obligations, even though we are not bound to those of whom we take advantage by any ties of particular fellow feeling…. Secondly, a sense of justice gives rise to a willingness to work for (or at least not to oppose) the setting up of just institutions, and for the reform of existing ones when justice requires it. (Rawls 1972, p. 474)*

environmental goods. Therefore we must, as Rawls himself puts it, "ascertain how the ideal conception of justice applies, if it indeed applies at all, to cases [...]we are confronted with injustice" (Rawls 1972, p. 351). Rawls then discusses these questions that belong to "the partial compliance part of nonideal theory" in the case of justified civil disobedience. In Article III some of these remarks are extended to the global and intergenerational level using the climate protection as an example of a new type of social cooperation. Particularly the argument in Article III discusses in the global and intergenerational context whether the certain climate policies do exceed the limits of injustice and trigger justification for civil disobedience. As Rawls recognises, these questions are difficult, because, in these cases, there is "a conflict of principles"; some principles counsel compliance to the unjust laws and policies while "others direct us the other way".

In Article III, I argue that even in these non-ideal circumstances the Rawlsian principle of fairness gives us some guidance about the legitimacy of our societal institutions, laws, and policies, and about the limits within which they deserve our compliance. Appealing to the principle of fairness and to democracy as a part of its implementation, it is possible to ground some novel citizenship duties, even when the intrasociety, global and intergenerational principles seem to be conflicting. For instance, if the existing institutions and policies represent a clear deviance from the fair global and intergenerational terms of social cooperation, the principle of fairness provides a justified ground to even quite radical acts of civil disobedience as an essential part of democracy.

Still the fairness principle's ability to ground individual's positive duties to contribute to the provision of critical environmental public goods is limited by the prospects of establishing just institutional arrangements between people. Rawls recognises that we, as individuals, do have a duty to "further just arrangements not yet established, at least when this can be done without too much cost to ourselves." (Rawls 1972, p. 115). To be sure, it is debatable what "too much cost to ourselves" is, but certainly one thing that affects, and about which Rawls seems to be concerned, is some realistic prospects for having more just arrangements (see also Rawls 1999). It is reasonable to make acts that are costly to us only if there are some reasonable prospects for success.[50] But if the realistic chances are poor, costly acts cannot be morally required by the principle of fairness (cf. Maltais 2013).

It is notable, however, that Rawls's theory also recognises duties that are not based on individuals' relation to the institutions of just and fair social cooperation. One of these, what Rawls calls natural duties, is the duty not to harm and not to inflict unnecessary suffering. As the duty holds irrespective of the institutional arrangements between people, it appears to be especially

[50] In discussing the justification of civil disobedience Rawls requires that the acts need to "promise some success" (1972, p. 253).

suitable for relations at global and intergenerational levels as well as to non-human world (see e.g. Attfield 2009, Broome 2012).

## 2.4 THE NO-HARM PRINCIPLE AND THE WIDELY DISPERSED PROBLEMS

The so-called no-harm principle, that is, the negative *pro tanto* duty to refrain from causing harm is often considered to be one of the most central pieces of our common-sense morality (see e.g. Lichtenberg 2010, Scheffler 2001). Yet, the possibility of appealing to the no-harm principle in context of widely dispersed environmental harms has raised an extensive debate in environmental ethics, particularly, in the ethics related to global climate change (e.g. Attfield 2009, Broome 2012, Cripps 2013, Hiller 2011, Jamieson 2014, 2010a, Maltais 2013, Nolt 2012, Peeters et al. 2015, Sandberg 2011, Schwenkenbecher 2014, Sinnott-Armstrong 2010).

According to one, widely shared view among climate ethicists, individuals' personal emissions do not on their own cause any harm, because the climate-related harm (e.g. that some people will be killed by a climate change related storm) occurs only because the *aggregate* GHGs emitted by very many people exceed a *threshold* in the climate system that triggered that storm. In the literature, this view against individual climate-related harm has been called the argument from *inconsequentialism* (Sandberg 2011, Sandler 2010). This argument is based on the following intuitively plausible view about harming: an agent harms others only if his or her actions cause some harm to occur that would not have occurred had the agent not acted in this particular way (e.g. Kutz 2000, Sandberg 2011). [51] The argument claims that acts of individuals that emit GHGs are inconsequential in this sense, however. As Walter Sinnott-Armstrong (2010, p.336) in his seminal article writes: "No storms or floods or droughts or heat waves can be traced to my individual act". Because there are so many thresholds, non-linearities and scalar differences in the climate system that intervene between an individual's actions of emitting and the resulting harm, the argument from inconsequentialism holds that it is highly implausible that an individual's emitting actions would have any (even imperceptible) effect to the occurrence of harm (e.g., Jamieson 2014, p. 164, Sinnott-Armstrong 2010).[52] As a conclusion, the no-harm principle is not

[51] Kutz (2000, p.116) calls this position the "individual difference principle". Donald Regan (1980, p. 13) calls it the "marginal consequences approach".

[52] According to the argument, the inconsequentalism is true even if any individual emissions "increase the stock of GHGs in the atmosphere by a very small amount, which in turn increases the radiative forcing of GHGs by a very small amount, which in turn entails a very small increase in the mean temperature of the planet" (Maltais 2013, p. 592). But the argument from inconsequentialism claims that the infinitesimal difference in the global mean temperature, due to complexity of climate system (e.g. the non-linear nature of many of the relationships, threshold effects, and buffers in the system),

applicable in the case of individual emissions and thus, in grounding the duties of individuals to change their behaviour and to promote more effective collective and institutional ways to prevent the climate-related harm, we cannot appeal to the harm each individual is personally causing (e.g., Jamieson 2014, p. 164, Sandberg 2011, Maltais 2013, Sinnott-Armstrong 2010).[53]

These difficulties in appealing to harm-based reasons at the individual level have prompted some climate ethicists to apply the no-harm principle at the collective level instead. Such a *collectivistic* approach suggests that when the effects are widely dispersed the moral evaluation of individuals' actions should be based on the collective outcome of their combined actions rather than on

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does not yet entail any difference in the occurrence of climate-related harm (see Jamieson 2014). Maltais (2013), for instance, calculates that if the total increase of the global mean temperature was 3°C, the life-time emissions of an average high-emitter contributes on the order of a billionth of a degree to it. Yet, according to Maltais, it is not straightforward that even this change in the mean temperature would make a difference in the resulting climate-related harm by any amount, because the only effect it may have might just be a delay in the harmful outcomes caused by the 3°C warming.

[53] Increasing number of authors has questioned this conclusion (e.g. Broome 2012, Hiller 2011, Nolt 2011, Peeters et al. 2015). John Broome, for instance, calculates on the basis of WHO's figures that during the life-time of an average person in a rich country these effects could add up to "wiping out more than six months of healthy human life" (Broome 2012, 74). John Nolt's estimations are even more extreme: an "average American is responsible, through his/her life time greenhouse gas emissions, for the suffering and/or deaths of one or two future people" (Nolt 2011, p. 3). Though these are effects of an *average person* and based on disaggregation from what are the likely impacts of total emissions, they are claimed to bear moral significance. Avram Hiller (2011), for instance, argues that the crucial matter here is not whether individual actions of an emitter in fact make a difference in the resulting amount of climate-related harm, but rather whether his or her actions make a difference in the *expected* amount of harm. Even if the causal process is complicated by many thresholds, non-linearities and scalar differences, there is always a chance that an individual's emissions trigger a threshold for causing some additional harm, e.g. trigger a storm that will kill many people. The idea is exemplified by Aaron Maltais as follows:

> *Simplifying a bit, we conceive of human induced global warming as a series of shifts in the climatic system that cause 100,000 deaths each. Each of these thresholds are caused by a large aggregation of GHGs emission made up of the lifetime emissions 50,000 emitters. I cannot know if my emissions will be the emissions that push the system past the threshold in one of the series of thresholds. Nonetheless, the chance that my emissions will push the system over the 50,000 mark in the series of thresholds is 1/50,000. This means that the expected marginal increase in harm from my emissions is 1/50,000 x 100,000 or two deaths. (Maltais 2013, p. 592)*

Authors holding the inconsequentialist claim doubt, however, whether this is sufficient to establish that the infinitesimal difference in the global mean temperature caused by an individual emitter (from 2,99999999896096 to 3°C, as Maltais calculates) leads to a morally relevant probability that this change will cause a large number of deaths (Cripps 2013, Maltais 2013).

the consequences of each individual's own action, which due to dispersion are deemed trivial. Derek Parfit (1984) famously formulated such a collective no-harm principle as an alternative to individual no-harm principle and many others have followed. Parfit's idea is that in cases of collective action, in which an individual action does not make any difference in the resulting outcome, we can appeal to the effects of the whole group. Most clearly, this could be the case, when effects are overdetermined, that is, the outcome results from several simultaneous individual actions each one of which would be sufficient to cause the outcome alone. As Parfit notes, in overdetermined cases we cannot appeal to the effects of any individual actions, since in isolation each of them is unnecessary to the occurrence of the resulting outcome. As noted above, many hold also that the global climate change is practically a case of overdetermination, in which an individual's emitting acts do not make any real (normatively significant) difference in the amount of resulting climate-related harm (e.g. Cripps 2013, Jamieson 2014, Sandberg 2011, Sinnott-Armstrong 2010; see also Kutz 2000).

Recently Elisabeth Cripps (2013) has developed a collectivistic view that we should appeal to the resulting collective climate-related harm that individual emitters cause *together*. The merits of this particular collectivistic approach are critically assessed in Article V, where I argue that the collective approach is unable to solve the specific collective action problem faced by individual emitters in fulfilling their duties of preventing the large-scale and widely dispersed environmental harms, such as climate change. According to my argument, individual emitters have a reason to fulfil their individual duties to promote the joint effort of preventing the collective harm *only if* they can reasonably believe enough other emitters will do their part. But given that the individuals themselves are widely dispersed around the globe and have thus no adequate means to assess others' participation and influence on their willingness to do so, I argue that without emitters' direct personal moral responsibility for the climate-related harm, the collectivistic approach fails.

In Article V, I defend the claim that individuals bear *personal moral responsibility* for the large-scale and vastly dispersed environmental harms. But rather than basing my argument on individuals' alleged (even imperceptible) effects on the resulting harm, as some authors do (e.g. Broome 2012, Hiller 2011, Nolt 2012, Peeters et al. 2015), I focus on a question that I take to be more decisive for the identification of individuals' *moral* responsibility: Does an individual's *intentional action* justify holding his or her morally responsible for the resulting environmental harm? In other words, in this thesis I can remain mostly agnostic about the question concerning the argument from inconsequentialism, because the bare causal responsibility for harmful effects is generally thought to be insufficient to ground the moral responsibility for the harm, in any case. What is required, in addition at least, that the agent acted intentionally. On the other hand, it is also generally accepted that in cases of overdetermination, discussed above, in which an agent's individual action does not make any difference in the resulting harm,

agent's intention to harm can warrant his or her moral responsibility for the harm.[54]

I argue that notwithstanding the structural facts of current unsustainable economies that constrain individuals' agency, individual who *knowingly* sustain and foster environmentally unsustainable and harmful ways of acting also bear personal moral responsibility for the resulting harmful effects and acquire, in line with the no-harm principle, a direct correlative *duty to engage personally* in the efforts of preventing the harm.

In Article V, I also suggest that identifications of personal moral responsibility may also significantly increase the ability individuals have in overcoming the collective action problems they face in fulfilling their collective duties of harm prevention. This is achieved by giving each individual a *direct* personal reason to commit herself to the collective organisation of preventing the harm and by giving others a warranted reason to expect such a commitment from her. Following Taylor's (1987) terminology, this kind of solution to collective environmental problems could thus be called as decentralised. The idea of decentralised solutions is that the initiative for solution is not concentrated in the hands of some external agent but is dispersed amongst the individual parties of the situation.

According to Taylor, some of the crucial incentives related to decentralised solutions are social, which "essentially derive from the desire for approbation and the dislike of disapprobation and work through mechanism like criticism and shaming" (Taylor 1987, p. 13, see also Olson 1971, p. 61). A specific way to utilise these social mechanisms related to justified identification of moral responsibility for large-scale environmental harm is explored in Article V. Justified identification of personal moral responsibility therefore provides individuals with motivating moral reasons to fulfil their environmental duties as well as grounding a warranted social pressure to this effect.

## 2.5 SUFFICIENTARIANISM: THE NORMATIVE THRESHOLD AND NON-IDENTITY PROBLEM

If the understanding of the Rawlsian contractualism discussed above is correct, as it is suggested in this thesis, there seems to no insurmountable conceptual problems that would prevent expanding the Rawlsian theorising to the global and intergenerational levels. There is a further central aspect in Rawls's theorising about intergenerational justice that may add its common-sense plausibility. Rawls thought that the distribution of benefits and burdens among generations is only required up to certain level and for a certain

[54] Even those who hold the argument from inconsequentialism seem to agree on this point (see e.g. Sinnott-Armstrong 2010, p. 335). When examining an overdetermined situation, Parfit (1984, p. 81) also writes the agent acts wrongly in such situation, "because he is intentionally a member of the group who together harms."

purpose (Rawls 1972, p. 290; see also Attas 2009, Wolf 2009). The purpose of the savings principle is not to benefit future generations *per se* but only to provide the material base required to establish and to maintain institutions of justice over generations. Once this sufficient level is reached, no more saving is required. For this reason, Rawls's account of intergenerational justice has been regarded as an early formulation of so-called *sufficientarian* approach to justice (see e.g. Meyer 2016).

The central characteristic of sufficientarianism is that there is a morally relevant threshold and our main moral concern should be in improving the position of the people below the threshold. The merits of this approach, particularly in the intergenerational context, are discussed in some detail in Article IV. Due to great epistemic uncertainties concerning the future and the "burdens of judgment" as a result of these, the sufficientarian approach may well be the best available strategy in the intergenerational context. The sufficientarian approach also seems like a plausible way to overcome some theoretical challenges that the intergenerational relations pose to the contemporary ethical and political theories and concepts, such as Rawlsian contractualism and the harm-principle discussed above.

Two issues deserve further comment in this introductory essay. First, there is the question about the relation between intergenerational and *intra*generational justice. What matters, according to sufficientarianism, is that people have enough of what they ought to have for a decent life; that is, they live free from deprivation. There is a negative counterpart as well: according to sufficientarianism, improving the position of the less well-off people above the threshold is of no particular concern. Due to this negative thesis sufficientarianism has provoked some plausible objections when applied among contemporaries (e.g. Casal 2007). According to Richard Arneson (1999), any specification of the morally relevant threshold, above which the importance of improving the less well-off person vanishes altogether, is arbitrary and in many cases implausible (see also Christiano 2008).[55] This is particularly clear, if the threshold includes only the most basic human needs. Then it can plausibly be argued that this sufficientarian approach to justice is too restrictive among contemporaries. For instance, equalizing relative differences between people also above some minimum level of basic needs is often taken to be necessary in order to guarantee political equality between them.

In order to address these objections, the thesis defends the following approach. Articles IV and V discuss different accounts of what certain fundamental interests are. Following the capability approach developed by Amartya Sen (1999) and Martha Nussbaum (2006), Cripps (2013), for

[55] It is worth to note, however, that even Christiano (2008), who defends democracy on egalitarian grounds, provides a qualified defence of a sufficiency principle. According to his argument a provision of an economic minimum is necessary to the public realisation of equality and is thus a condition on the authority of democracy.

instance, suggests a view about fundamental human interests based on recognizing certain functionings as necessary for decent human life. These include at least having an opportunity to enjoy continued life of a normal human length, bodily health, bodily integrity, meaningful relationships with others and an ability to pursue a plan for one's own life with an adequate education.

The thesis defends this kind of minimum threshold at the *intra*society, global as well as at the intergenerational level, though I do not commit myself to any specific understanding of the minimum.[56] At the intrasociety (and to some degree also global) level, however, there are likely to be reasons to hold even more expansive notion of the threshold in order to ensure political equality between the members of those who are tied together by shared institutions of authoritative decision-making (see e.g. Anderson 1999, Article III). As the next section of this introductory essay summarises, the central claim of this thesis is that, due to "burdens of judgment", democratic decision-making remains as an important way to produce legitimate and authoritative (environmental) outcomes. Therefore, there might be necessary to include more essential interests in the appropriate sufficientarian notion of democratic equality; like, for instance, those related to being able to see that one is treated as an equal in one's society, discussed in Article II and below. As discussed in Article III, to ensure sufficient democratic equality, a specific intrasociety distribution of resources may be required, which differs from what is required globally and intergenerationally. [57]

The second issue is the infamous Non-Identity-Problem (NIP), that seems to pose a significant challenge both to the no-harm principle as well as to intergenerational contractualism (see e.g. Attfield 2012, Boonin 2014, Heyd

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[56] I hold Cripps's account quite sensible point of departure, but providing a full defence is out of scope of this work.

[57] This opens the question about the relation between intrasociety sufficiency based on political equality, defended in the thesis, and Rawls's intrasociety *difference principle*. The difference principle forbids all income inequalities that do not improve the position of the (absolute) worst off. Though applying Rawlsian original position, the approach here does not commit itself to difference principle as the intrasociety principle of distribution. As Anderson writes: "Democratic equality would urge a less demanding form of reciprocity. Once all citizens enjoy a decent set of freedoms, sufficient for functioning as equal in the society, income equalities beyond that point do not seem so troubling in themselves." But as noted by Attas (2009) even Rawls's own position may not be as demanding as it appears: "At least with respect to the intra-generational [and intra-society] aspect of the difference principle, maximising the position of least advantaged is obligatory until a *threshold of adequacy is reached*. At this point everyone's basic and urgent needs are met, and the institutions of justice are established. Once that level is reached it is possible that inequalities in income will harm individual's self-respect. To take account of this participants to the original position will allow inequalities to fall short of the maximinimizing point, so long as they do not go beyond it. To what extent individuals' self-respect is harmed and the degree of equality that would rectify it is a matter *they would leave to political deliberation*." (Attas 2009, p. 215; emphasis added). (See also Rawls 1972, p. 546).

2009, Parfit 1984). Consider the case of climate change once again. As recent climate reports testify (IPCC 2014), our current GHG-emissions are likely to make very many people seriously badly-off in the future. However, NIP concludes that we in fact do not harm future people by our actions of increasing climate pollution, because our current decisions that create the future of polluted climate also count as a necessary condition of the very existence of those future people who will suffer the consequences of our pollution. Had we acted otherwise, e.g. stopped pollution, these people wouldn't have even existed.

In relation to the no-harm principle the NIP arises, because our common way of understanding 'harming' is *comparative* in the following sense: it holds that an action (or inaction) harms someone only if the agent causes that person to be *worse off than* the person would have been had the agent not interacted with this person at all. Thus it seems implausible to claim that we would have made the future people of polluted climate worse-off by our actions, because that would imply that we were able to make a comparison of the state of these people to their non-existence, and then conclude that these people would have been better off if they have not existed at all. Given that the future world of polluted climate is not so terrible that it makes the life of the people of that world doubtfully worth living, such a claim would be highly implausible.

But the conclusion of NIP follows *only if* we hold the above comparative understanding of harming. Article V suggests a sufficientarian threshold notion of harm as a way to circumvent the NIP (see also Meyer 2016). According to a threshold notion of harm, an action harms someone if the agent thereby causes the person to be in a state that is below the specified normatively relevant threshold. Since the identification of the threshold harm does not require that we should be able to compare the state of this sub-threshold person to her better-off state in a situation that would have obtained in the absence of the harming action, we are able to avoid the Non-Identity Problem.

For the contractualist theory the NIP becomes a challenge, because it seems highly implausible that representatives in the original position would choose principles (e.g. those of limiting the pollution), which mean that they would not exist at all. The understanding of Rawls's original position, proposed above in section 2.2 of this introduction, offers also a way to avoid the NIP. The fact that earlier generation has also the power to determinate the identity of the future generation is a similar kind unfair asymmetry as those caused by social positions, natural abilities that the original position tries to eliminate. Therefore, it seems plausible to think, that in the same way as the representatives behind the veil of ignorance do not know their social position and natural abilities, they are also ignorant about the issue of which particular individuals of any generation they might be (see Reiman 2007).

As discussed above Rawls applies a *present-time-of-entry* interpretation of the original position but constrains it by universality condition. In this interpretation the interests of future people are not represented by actual

participation in the original position (which would lead to NIP) but rather because they relevant interests count due to universality condition and because the representatives do not know to which generation they belong. It is therefore in the self-interest of each to choose as if she would choose "for all" (Rawls 1972, p. 121).

From this perspective what is morally relevant is whether one's certain fundamental interests or capabilities for normal functioning are satisfied, notwithstanding which particular individual one might end up being. If this is so, the fact that the choice between polluting and non-polluting policies affects also who the future people will be has no moral relevance in the original position; and current generation have a duty to limit their pollution of climate that threatens the fundamental interests and capabilities for normal functioning of the future people.

## 2.6 DEMOCRACY AS WAY TO PRODUCE LEGITIMATE ENVIRONMENTAL DECISIONS

The central claim of this thesis is that, due to "burdens of judgment" and to the resulting disagreements, democratic decision-making remains as an important way to produce legitimate and authoritative (environmental) outcomes. Because of this, there also remains a moral difference between individuals who are connected by shared democratic institutions and those who are not. As noted above, appropriately democratic decision-making requires, for instance, that the political equality between those who participate is sufficiently guaranteed.

Yet, the importance of democratic decision-making in the face of environmental crisis is not a self-evident matter. According to the standard liberal thinking, people in pluralistic societies disagree about what is the right order of alternative policy goals and what serves as the right basis for evaluating the merits of alternative goals and policy measures. Therefore, the source of legitimacy of the political decisions must be in the fairness of the decision-making process, rather than in the epistemic (e.g. environmental) quality of the outcomes (e.g. Waldron 1999). The obvious risk with this *fair proceduralist* idea of democratic legitimacy is, of course, that the outcomes must be held justified and legitimate regardless of their environmental impacts. The wide dispersion of the impacts globally and intergenerationally – not to mention the impacts to the non-human nature –makes the challenge even more profound. Conflicts over the legitimate political community (e.g., whose views should count in legitimate decision-making?) or over legitimate representatives of this community, can become just as serious as those that concern the content of the policies.

As a reply to these challenges many green political theorists have advocated the so-called *deliberative* approach of democracy in order to strengthen the link between environmental goals and democratic procedures (e.g. Dryzek

1987, 2001, Eckersley 1993, Goodin 1996, Baber & Bartlett 2005). The deliberative approach shares the idea of fair and equal procedures as an essential element of legitimacy but connects these procedural requirements more closely to the requirements of reasoned deliberation. The central idea of deliberative approach to democracy is that the democratic decision-making should not be seen as a social choice mechanism that aggregates isolated individual preferences (e.g. of those about alternative environmental policies) but rather as a process of *collective reasoning* in which the content of the preferences and more importantly the moral values underpinning those preferences can change as a result of the public deliberation and debate.

This understanding of political decision-making as a mode of collective reasoning, is thought to be important in environmental context for following reasons. Since deliberative democracy emphasises that a fair democratic process should consist of a reasoned assessment of arguments and of collective forming of judgments, it can claim that those processes lead to better outcomes environmentally. It is also argued that public deliberation will help purge individuals of their short-term and egoistic motivations and adopt more other-regarding, public-oriented, and environmentally enlightened motivations.[58] Finally it is suggested that in the deliberative processes people's disagreements, conflicting interests, and diverging values could be reconciled.

The problems related to the deliberative way of grounding the legitimacy and authority of environmental policies are discussed in some detail in Article II, especially when the approach is understood as requiring more direct actual participation of affected parties in the decision-making.[59] While recognising the specific valuable insights related to reasoned deliberation, the argument presented in Article II cast serious doubts on whether the ideals of deliberative approach can ever be actualised in real processes of public participation.

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[58] This argument is also supported by some experimental studies that show how individuals in PD when allowed to discuss their situation before choosing their moves, play cooperative move significantly more often purely because of the prior discussion period (see e.g. Dawes *et al* 1977, Frey & Bohnet 1996).

[59] An alternative way to understand the deliberative approach is to hold on to the idea of reasoned deliberation as a counterfactual ideal by appealing to that which we are able to decide whether or not our actual decision procedures and policy outcomes are justified to gain legitimacy and authority (see e.g. Cohen 1997). This so-called "mirroring view" understands the role of the counterfactual ideal deliberation as giving a model of ideal decision-making that the actual processes should as much as possible resemble, or mirror. But "mirroring view" is highly questionable source of legitimacy in the non-ideal world, full of asymmetries between participants in political power. In such a non-ideal world more resemblance with the ideal deliberation would easily lead to an outcome that is even further from the ideal. Therefore in order to promote the values of deliberative ideal in non-ideal circumstances, we need to have, as David Estlund (2008, p. 185) puts it, a model of "political participation that gives a principled place for sharp, disruptive, and even suppressive participation under right circumstances, without jettisoning the whole idea of ideal deliberative situation." Articles II and III aim to provide distinct ethical arguments for such a model of political participation.

Instead, in Article II, I suggest an alternative way to understand democratic legitimacy and political participation. According to, what Gerald Gaus (2003, p. 170) has called *Democracy's minimal epistemic claim*, democratically produced outcomes are legitimate and authoritative because no other way of resolving the ethical and political disagreements that would also be beyond reasonable doubt can be shown to be epistemically better than democracy. But, according to my argument, the epistemic qualities of the outcome depend not so much on the particular processes of reasoned deliberation but more profoundly on the unrestrictive forms of informal public communication, which may take a wide variety of forms of political participation including political confrontations and acts of civil disobedience (see also Estlund 2008). In line with this, Article II suggests that democratic processes which increase the overall input of various perspectives together with reasoned deliberation have a tendency to promote the policy outcomes that take the interests of nature, of citizens in other countries, and of future generations into account.

In addition to the epistemic values, the argument in Article II supports democratic procedures and public deliberation about environmental issues by resorting to their *publicly* recognisable equality and fairness. Even if public deliberation does not transform citizen's self-interested claims into public-spirited ones, it does make the justifications of political decisions available to them (see e.g. Gutman and Thompson 1996). This also makes democracy *morally superior* way to dissolve moral disputes (Gaus 2003), because it publicly treats everyone as equals (Christiano 2008). According to Thomas Christiano (2008), in a society where citizens acknowledge the "burdens judgments" and where disagreements obtain, each citizen has an interest in not only being treated as equal, *but also in being able to see that he or she is treated as an equal* and not in accordance with someone else's conception of equality. Furthermore, as argued by Christiano, the value of publicity is also grounded in the fact that citizen's diverse judgments often reflect modes of life to which they are accustomed to or in which they feel at home. Thus each citizen has a fundamental interest in having a sense of being properly at home in the society in which she lives. Public knowledge can encourage this sense to the extent that everyone can see how the society is responsive to her interests. Finally, every citizen has a fundamental interest to see that she has an equal moral standing among her fellow citizens.

In Article II, such considerations are argued to be important for the legitimacy of environmental policies that may require drastic changes in private consumption patterns, life-styles, and conventional habits and thus concern people's most salient interests, like those related to decisions concerning one's residence, eating habits, and means of daily transportation. At the same time citizens in liberal societies place high value in having a free choice in making these decisions.[60] As a study by Huib Pellikaan and Robert J.

[60] Thomas Scanlon characterises this as "representative and symbolic values" of certain choices that people are normally expected to make for themselves and denying some individuals this would reflect a

van der Veen (2002) points out, due to this private significance people attach to choices of transportation and even holiday destination, policies where people voluntarily change they behaviour are probably the only way of obtaining compliance in these areas. (Pellikaan & van der Veen 2002, p. 44; see also Dobson & Bell 2006, Kymlicka & Norman 1994).

judgement that these individuals are not competent or have no equal standing as members of the society (Scanlon 1998, p. 253).

# CONCLUSION

It is certainly true, that the ecological challenge humanity is facing is serious. As Stephen Gardiner in his ground-breaking book, *A Perfect Moral Storm,* writes, it is also true that the tragedy is "most centrally an ethical failure, and one that implicates our institutions, our moral and political theories, and ultimately ourselves, considered as moral agents". (Gardiner 2011, p. 3). Similarly, the magnitude of the tragedy seems to not only "overwhelm our cognitive and affective systems", but also to "swamp the machinery of morality, at least as it currently manifests in our moral consciousness", as another leading environmental ethicist Dale Jamieson writes in his most recent book *Reason in a Dark Time* (Jamieson 2014, p. 144).

I agree with Gardiner that the most prominent political philosophers have remained relatively silent about the global and intergenerational environmental problems, and for that reason many of the themes most acute today have remained underdeveloped. I also agree with Jamieson that the complexity and extraordinary scope of current ecological crisis threats to overload our capacity as individual moral agents.

Yet, my attempt in this thesis is to defend some conventional and common-sense ethical principles as theoretically viable ground for normative political theorising even at the age of ecological tragedy. In sum, this thesis provides a defence of the ethical principles of fairness, of the no-harm principle and of sufficientarianism in the context of large-scale and vastly dispersed environmental problems that expand beyond the boundaries of the existing political communities and authorities. It also defends a certain understanding of democratic authority as epistemically and morally superior way of implementing those principles in the complex and uncertain world.

Our common situation is perhaps tragic, but not hopeless.

# 3 THE ARTICLES OF THE THESIS

## 3.1 ARTICLE I

Kyllönen, Colpaert, Heikkinen, Jokinen, Kumpula, Marttunen, Muje & Raitio: "Conflict Management as a Means to the Sustainable Use of Natural Resources".

ABSTRACT: Democratic societies' emphasis on individual rights and freedoms inevitably opens them up to political disputes. Conflict management should accordingly be seen as an integral part of democratic institutional design. The emergence and management of policy disputes concerning the use of different natural resources in Finland is analysed by using the theoretical models of frame analysis and strategic interaction. The studied disputes include lake fisheries, watercourse regulation, reindeer herding, and forestry. The institutional design in the case studies varies. Despite the differences, many common features are identified that could explain their successes or difficulties in achieving sustainable and cooperative use of the resources. Among these are problems involving complex and uncertain knowledge, differences in frames held by multiple users of a resource, and distrust between the users and other parties. The analysis concludes with preliminary conclusions on how various disputes related to sustainable resource use could be managed. These include addressing the knowledge and frame problems in order to initiate a learning process; establishing sub-processes in which mutual trust between the parties - including a managing authority or a third party - can emerge; giving explicit roles and a clear division of entitlement to the parties; and providing a credible alternative for co-operation that affects the parties' payoff assessments during the process. Finally, the conflict management process shouldn't be regarded as a distinct phase of dispute resolution, but as an essential aspect of ongoing co-management practices of resource use.

Keywords: conflict management, resource management, sustainability, deliberative participation, frame analysis, assurance game, prisoners' dilemma

## 3.2 ARTICLE II

Kyllönen, S.: "Public participation and the legitimacy of environmental decision-making: efficacy versus democracy?"

ABSTRACT: Public participation has become one of the central notions in environmental governance. There are two sorts of arguments for more deliberative and participatory environmental policy processes. On the one hand, participatory means are needed for democratically legitimate decisions. Behind this is, first, the idea that broad public participation incorporates the values and interests of affected parties into decision-making more inclusively and equally. Second, public participation should serve as a deliberative process, in which these possibly incommensurable values and interests are publicly considered, reconciled and justified.

On the other hand, public participation, particularly in climate issues, is advocated because it improves the quality of decisions and help in outcome-oriented problem solving. Because of the complexity of climate change and the urgency to produce effective outcomes, well-informed participation and deliberation among experts of the field (e.g., scientific experts, NGOs, governmental officials) has become vital for the efficacy of decisions. Most importantly, the participation of these 'epistemic communities' is claimed to assure that the outcomes are the best available effective solutions to the human induced global warming. Such participation does not resort to 'abstract' theories of democratic legitimacy.

In this theoretical paper the controversy between (deliberative) 'legitimacy theories' and 'problem-solving approaches' is seen to result, first, from vaguely analysed relations between alternative ways of public participation in climate policy-making, and second, from a too narrow understanding of the concept of democratic legitimacy. In this paper the alternative ways of public participation at work in problem-solving approaches are analysed in some detail. This allows for a more comprehensive understanding of the ways in which legitimacy and authority of epistemic participation are actually dependent on more general forms of public justification highlighted by so-called legitimacy theories. Finally, this paper aims to clarify how and to what extent public participation can enhance the authority of climate policy outcomes to command assent and compliance by citizens particularly in the areas of private behaviour in which coercion or material inducement are often costly or even regarded as illegitimate. According to the main argument of this paper, it is particularly with such areas of private behaviour where democratic legitimacy in the form of public justification meets effective problem solving.

## 3.3 ARTICLE III

Kyllönen, S.: "Civil Disobedience, Climate Protests and a Rawlsian Argument for 'Atmospheric' Fairness".

ABSTRACT: Activities protesting against major polluters who cause climate change may cause damage to private property in the process. This paper

investigates the case for a more international general basis of moral justification for such pro- tests. Speci c reference is made to the Kingsnorth case, which involved a protest by Greenpeace against coal-powered electricity generation in the UK. An appeal is made to Rawlsian fairness arguments, traditionally employed to support the obligation of citizens to their national governments as opposed to their international duties. The argument made here, however, is that there seem to be sufficient reasons for holding that a stable climate is one of the first truly global public goods that is indispensable to acceptable standards of living everywhere. This would suffice to justify international and intergenerational 'atmospheric' political obligations, which in turn may justify protests – even those causing some damage to private property – against the laws and policies that violate the fair terms of cooperation in providing a stable climate. The fairness argument aims also to provide a ground from which Green political theory could integrate accounts of radical forms of citizenship into appeals to state political authority. This leads to justifying acts of civil disobedience on the basis of novel understandings of 'atmospheric' citizenship obligations.

Keywords: Climate protests, civil disobedience, Rawlsian fairness argument, international and intergenerational justice

## 3.4 ARTICLE IV

Kyllönen, S. and Basso, A.: "When Utility Maximization is Not Enough. Intergenerational Sufficientarianism and the Economics of Climate Change."

ABSTRACT: The evaluation of climate policies raises a number of specific problems for the standard economic methods of evaluation. These problems have motivated a number of authors to suggest that the economics of climate change should go beyond the standard economic modeling and its narrow utilitarian ethical underpinning. In order to explore this issue, the chapter considers the sufficientarian approach to intergenerational justice, which has become increasingly popular in climate ethics. We compare sufficientarianism with utilitarian and prioritarian approaches as ethical frameworks for the economic evaluation of climate policies. We then explore the distinctive conceptual and normative choices required for the sufficientarian approach in climate economics: specifying and modeling the sufficientarian threshold; modeling the limited substitutability between different resources; and choosing the social discount rate. We argue that, although it is possible to use sufficientarianism to underpin the ethical choices related to the evaluation of climate policies, this attempt raises some conceptual and practical problems for climate economics. This reveals some of the limits of the standard economic evaluation of climate policies in dealing with the distributional issues related to climate change. However, the increasing willingness of

environmental and climate economists to modify the assumptions and methods of standard economic evaluation opens a possibility to devise an economic evaluation of climate policies based on intergenerational sufficientarianism. The chapter concludes by evaluating some recent proposals in environmental economics – such as introducing resource-specific discount rates – as a way of reflecting sufficientarian ethical principles.

Keywords: Sufficientarianism, economics of climate change, time discounting, intergenerational justice

## 3.5 ARTICLE V

Kyllönen, S.: "Climate Change, No-Harm Principle and Moral Responsibility of Individual Emitters".

ABSTRACT: While it is ever more evident that unmitigated climate change will cause serious harm to very many people, the wide dispersion of causes and effects makes the distribution of accountability for the foreseeable climate-related harm and the correlative duty to prevent the harm a highly contested matter. According to collectivistic approach, emitters' responsibilities are primarily collective; emitter's actions cause climate-related harm only in combination with the actions of others and they are also able to prevent any such harm only by acting together. However, as unstructured emitters do not yet form a group capable of acting together, their ability to discharge their collective responsibilities is questioned. The paper examines the objections raised against the collectivistic approach and argues that individuals who knowingly participate in the carbon intensive ways of acting are also individually accountable for the resulting climate-related harm. According to the advocated view, emitters' individual accountability gives each emitter a direct personal reason to commit herself to the collective organisation of preventing the harm and others a warranted reason to expect such commitment from her. Individual accountability of emitters may then significantly increase emitters' collective capability of acting together in creating novel ways to remedy the climate crisis.

Keywords: Individual responsibilities; collective harm; anthropogenic climate change; no-harm principle; collective action problems

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